THE

MEDICAL RECORDER.

VOL. X. *JULY*, 1826. NO. I.

[In pursuance of the plan adopted by the Proprietor of the Medical Recorder, for collecting from all parts of the United States contributions of merit, and thus to render its pages a depository of valuable materials for the future medical history of our country, the Subscribers are presented with the following Essay, which will, it is hoped, support the character of the Journal, and be found highly useful.]

The Subscribers having examined, at the request of the Proprietor of the Medical Recorder, a number of Essays on Gout and Rheumatism, are of opinion that the paper bearing the motto "Id arbitror, &c." is entitled to the proposed premium.

JOSEPH HARTSHORNE, M. D., Philadelphia.
PATRICK MACAULAY, M. D., Baltimore.
JOHN W. FRANCIS, M. D., New-York.

ART. I. *On Gout and Rheumatism.* By M. PAGE, M. D., of Richmond, Virginia.

——— Id arbitror
Adprimè in vita esse utile, ne quid nimis.
TER. *Andr.* Act I. Sc. I.

KINDRED affections, and such as involve the system in a train of complex sympathies, are apt to impose upon the mind and mislead the judgment. In the history and treatment of gout and rheumatism, the truth of this observation is clearly seen. Closely resembling each other in many of their leading features, our brethren were for ages deceived, and confounded them as one and the same disease. From this cause, their speculations were vague and uncertain, and their practical deductions oftentimes erroneous.

It would afford matter for curious inquiry, to follow the various suggestions of writers on the subject of arthritic complaints, from the time of Hippocrates to the present day.

Diseases of the joints were, by the fathers, considered as an unit, depending on the same general causes, varying only in degree and local modification. Thus, under the term arthritis, αρθρον, a joint, with the final itis, denoting inflammation, were included all the inflammations to which the joints are liable. This term was used not only as generic, but also as specific, and applied to the ordinary forms of gout by way of excellence.

Arthritica comprehended podagra, chiragra, gonagra, &c. and the various forms of rheumatism, as lumbago, sciatica or ischias, and plurodine. The Latins adopted these terms from the Greeks, and, with those modifications in their meaning, which clearer views, and a more correct pathology, have introduced, they have been handed down to us. Sauvages has given a very complicated arrangement on this subject, creating species, divisions, and subdivisions; but he has so confounded other diseases in the account, that it is next to impossible to follow him.

It is a subject for deep regret, that the labours and research of early writers on these affections, were so clogged and embarrassed by erroneous theories, as almost to deprive them of practical results; for, on a retrospective examination of the mass of materials offered by them, it is easy to perceive, that the progress we have made in this interesting investigation, bears no proportion to the time and attention expended upon it. No disease, or class of diseases, has offered so large a field for medical reason; none has been so darkened by superstition and prejudice; and none more successfully employed by empiricism to impose and practise on the credulities of mankind. In this soil the humoral pathology had taken deep root, and its supporters contended in safety in defence of their favourite doctrines, as many of their arguments were drawn from arthritis, which had been involved in mystics, and traced to a pervading lentor.

Even after the various inflammations grouped under this head had been classed, divided, and reduced to order, the same ideas of pathology prevailed. Enlarged experience and attentive observation at length showing that arthritic complaints differed widely in their causes, appearances, and in the method of cure, the nosological division into gout and rheumatism was adopted, and some light admitted on the subject. Sydenham observes of rheumatism—"The disease, when not attended by fever, may oftentimes be confounded with gout, although it varies widely therefrom, as will clearly appear to those who are well learned in both diseases; and

for this reason probably, physical writers have not mentioned it; unless we were to consider it a new disease." Still, however, the idea of a lentor prevailed, and the term rheuma, ῥεω, to flow, was admitted into the humoral vocabulary.

As far as we have discovered, the praise of first treating rheumatism as a distinct disease, is to be ascribed to Baillou, or, as he writes his name in Latin, Ballonius; his treatise "De Rheumatismo et Pleuritide Dorsali," appeared in Paris, anno 1633, in which rheumatism is defined and distinguished from the other arthritic affections. "It hath hitherto," says he, "been confounded with catarrhus and arthritis; but it appears advisable to distinguish them, the one being a depuratory process, whereby the acrimonious qualities of the impure blood passeth off to the skin, through the muscles and nerves, causing pains in the whole body, and uncertain in the time of coming on." The gout he describes as seated in a certain part, and periodical. Considering the disease to depend on acrimony, he calls it rheumatismus, deriving its etymology from ῥευμα, defluction. The other species of arthritis to which we have alluded, received also its vernacular term of gout in the schools of humoralism. On turning to Musgrave de Arthritide, we find—"The term gout came to us through the French; la goutte was used in the dark ages by the humoral pathologists, who supposed the disease to arise from the gradual deposition of a morbid humour, guttatim, as it were, around the joints; hence, the name gutta, a drop, was given to the disease. This name, according to Du Cange, was introduced by Rudolfus, a Dominican, of the thirteenth century, who writes—'cum gutta, quam podagram vel arthriticam vocant, frequenter vexaretur.' It is much more easy to detect an absurdity, than to correct it. Sauvages in Nos. Meth. says—'Gutta dicitur, ex absurda veterum hypothesi, qua ab humoris cujusdam stillicidio, in articulos facti, cum dolorem oriri putabant.'"

Thus do men wander in uncertainty; thus does the light of truth break, by slow degrees, upon the mind; and thus does the steady exertion of laborious and patient investigation, meliorate the condition of mankind. Although we do not find a just rule of practice, for these distressing affections, in the ancient authors; we do find a mass of excellent material, which their laudable zeal and attentive observation enabled them to collect. They were diligent and indefatigable in collecting symptoms and recording appearances. Hippocrates, Celsus, Sydenham, and Boerhaave, described arthri-

tis with so much accuracy, that little was left to be added in this department by modern writers.

It would occupy too much space to follow our subject through the various schools; suffice it to say, that it has passed in succession the humoral, the sympathetic, the mechanical, and the chemical. Hippocrates, Galen, and most of the Greek physicians, supposed arthritis to depend on pituitous matter, or bile mixed with phlegm, passing to the joints; others declared that blood itself, viscid and impure, was forced into these parts; and Oribasius attributed the chalk-like matter often met with, to "crystallized blood," remaining in the joints. These notions of humoralism were combated and overturned by the mechanical and methodic philosophers, who traced all those morbid appearances to a relaxed state of the capillary vessels, suffering various salts and other peccant matters to flow to the joints, which were by them presupposed to exist in the blood. In turn, the sect of chemists used these mathematical arguments to disprove the favourite hypothesis of their predecessors, and the pen of Paracelsus, which conveyed the keenest ridicule, was successfully turned against them. For many interesting remarks on chemistry, as applied to medicine, we refer to the writings of this eccentric genius, whose memory has been much abused by some commentators; also, to the works of Van Helmot, Boerhaave, and Lister, for notions of pathology.

After each removal, the most sanguine anticipations were entertained. Chemistry, particularly, offered much. As it was supposed to depend upon acrimony and acidity, alkaline remedies were introduced, under an impression that, as counter agents, they would neutralize these acids, and form with them a salt, which would gently carry off all crudities: and testimony enough in their favour is to be found in some of the old tracts of that day. Unfortunately, however, these proteiform diseases have hitherto proved too strong to be overcome by any one class of remedies: an extension of our views is required; instead of cherishing an insidious complaint, which is continually undermining the constitution; instead of flattering sufferers with a false hope of exemption and security from other diseases; steady and persevering exertions should be made to eradicate it altogether. Diseases which it has required time to produce, will require time for their cure: 'a chronic affection must be overcome by a *chronic* remedy.' Sydenham has described arthritis with a master's hand; but having been baffled in some attempts to effect a speedy solu-

tion, and becoming alarmed by the apprehension of retrocession; contented himself with doing almost nothing; trusting the unfortunate sufferer to flannel, and the strength of his constitution. Enslaved by his high authority, subsequent physicians have handled the subject with a kind of superstitious dread, approaching the bed-side as if an enemy, too powerful to be offended, had taken possession; and however excruciating the pain, unless some vital part is affected, have still contented themselves with an offering of condolence. We trust that the time will speedily arrive, when reason and sound pathology shall dispel these errors; when empiricism shall cease to be encouraged, and good sense and rational science be established in its stead.

So far, arthritis has been considered more with regard to its generic than to its specific import; we shall now adopt the nosological division into gout and rheumatism. In order more fully to illustrate these diseases, to show their relations, and, at the same time, to mark the striking peculiarities of each, we shall attempt a distinct sketch of both, noticing the causes on which they depend, their nature and symptoms, together with the method of cure and prophylaxis. When the two pictures are thus drawn, we may distinguish at a glance their respective features.

First, of gout. In the last edition of his Nosology, Dr. Cullen defines gout; Gen. XX. iii. Podagra.—Morbus hæreditarius, oriens sine causa externa evidente, sed præcunte plerumque ventriculi affectione insolata; pyrexia; dolor ad articulum et plerumque pedis pollici, certe pedum et manuum juncturis, potissimum infestus; per intervalla revertens, et sæpe cum ventriculi, vel aliarum internarum partium, affectionibus alternans.

Varietas 1ma. Podagra, regularis, cum inflammatione artuum satis vehementi, per aliquot dies perstante, et paulatim, cum tumore, pruritu, et desquamatione partis, recedente.

Var. 2da. Podagra, atonica, cum ventriculi, vel alius partis internæ atonia, et vel sine expectata aut solita artuum inflammatione, vel cum doloribus artuum lenibus tantum et fugacibus, et cum dyspepsia vel aliis atoniæ symptomatis, subito sæpe alternantibus.

Var. 3tia. Podagra, retrograda, cum inflammatione artuum subito recedente, et ventriculi vel alius partis internæ, atonia mox insecuta.

Var. 4ta. Podagra, aberrans, cum partis internæ inflammatione, vel non prægressa, vel prægressa et subito recedente, inflammatione artuum.

To such a definition there are various objections, which we shall take occasion to notice in the course of this paper; but, on much examination, no other has been found to claim a preference. Judgment should not be warped by authority; but it is agreeable to find ourselves supported by that which is so respectable.

We consider gout to be a disease of indirect excitement, depending upon a weakened and vitiated state of the system, particularly of the alimentary canal. The predisposition is often hereditary, but also easily acquired: exciting causes produce it more speedily when the predisposition is hereditary. Persons most liable to attacks are those of robust habits, with large heads, and full, round chests, though we have often met with it in purely melancholic temperaments. The male is more frequently affected than the female sex; in this, however, we apprehend there is nothing constitutional; women are less exposed to the exciting causes, and the predisposition expends itself under other forms, as hysteria, sick headache, or some anomalous complaint. It usually appears after the age of thirty; that is, after energy has been impaired, and the system weakened by various causes, though sometimes earlier, and we have seen the diseases of children, entitled to gout from their parents, strongly biased by this predisposition. Hippocrates asserts, that boys previous to puberty, and eunuchs, are not liable to the disease; but this conveys an erroneous impression. Galen, in his "Commentaries," notices the opinion of Hippocrates, and says, that it would not apply to the eunuchs of his day, "owing to their too great indolence, and intemperate indulgence." He is supported by Van Swieten. Cullen, however, has drawn his ideas from Hippocrates.

For the sake of accuracy and precision, we shall divide gout into the two great heads of regular and irregular. Regular gout is either highly inflammatory, or it has become chronic. Irregular gout is either retrocedent, or it is misplaced and erratic. Sydenham only applied the term regular to that form of gout which we name podagra; subsequently, it has been extended to inflammatory affections of any of the joints, obeying the same general laws. A regular fit of gout is, for the most part, preceded by symptoms of dyspepsia, as flatulency, uneasy sensations about the stomach, sour eructations, cardialgia, a listless and feverish habit of body, cold feet with numbness and prickly sensations, attended with some irritability of mind. These symptoms may not be so urgent as to cause alarm, and generally the patient is sur-

prised when the local pain makes its appearance. After having been in bed for a time, he is roused by an acute and increasing pain, for the most part occupying the ball or metacarpal joint of the great toe, though occasionally other parts of the foot and ankle are affected. This takes place about two o'clock of the morning. The pain is attended with more or less of chilness and shivering, which, in a short time, give place to symptomatic fever. Pain and pyrexia continuing to increase, the patient is restless, often changing his position in hopes of finding relief. He describes his sensations as if scalding water were poured upon the part, or as if the joint were dislocated and the ligaments lacerating. Sydenham, who was himself a martyr to gout, expresses the pain most feelingly, and in his strong language compared it to the gnawing of a dog. The sense of constriction and weight becomes so great, that even the motion caused by persons walking in the chamber is insupportable. The stomach is very much oppressed; should vomiting occur, the matter thrown up is acid and bile, of a dark colour, sometimes green; the fæces present a tar-like appearance, are extremely fetid, and come away with much tenesmus. The urine is turbid and high coloured, depositing, after a time, a great deal of lateritious matter, mixed with mucus; during the pyrexia, it is passed with apparent effort, as the kidneys and neck of the bladder are strongly affected; but, as the paroxysm subsides, the flow is more copious, and the deposite more abundant. This state continues throughout the day, and until about eleven or twelve the succeeding night, when the pain gradually subsides, and about two or three o'clock, that is, twenty-four hours after its commencement, the patient is sufficiently relieved to fall into a gentle sleep, from which he awakes, finding himself in a perspiration, except on the affected part, which is then only slightly painful, with some little tumefaction and redness.

For several days after such a paroxysm as has been described, a slight exacerbation of fever and pain is experienced every evening, which continues throughout the night, with more or less violence; after a short time, however, the patient is restored to health, with greater alacrity of body and mind than had been enjoyed for a considerable period.

Gout, for the most part, only seizes on one joint at a time, though repeated attacks may successively involve them all; and, after the system has been exhausted by these repetitions, more joints than one may be affected, as the metacarpal joints of the great toes, the knee, and the wrist; but, in such cases, the pain is more acute in one or the other, as these parts have

been previously weakened. Sydenham says there are cases in which, after the course described, the pain, instead of going off, falls with equal violence on the other foot, giving rise to a similar train of symptoms; but in this case the foot first affected becomes relieved; he has occasionally seen both feet affected at once. When the paroxysm has entirely subsided there is usually a considerable degree of itching and desquamation of the part. These cases of Sydenham go to prove the important fact in medicine, that it is much more difficult to counteract a predisposition than to overcome the disease when excited into action; the remedies applied are sufficient to relieve the existing and declared attack, though the predisposition remains and is ready to fall with equal violence on the other foot: the remark applies equally to rheumatism, and we think might be extended to other diseases. Although the attack of gout is usually first felt about two or three o'clock in the morning; it sometimes happens in the evening, and some rare cases are recorded, when it has come on at other hours. The season of the year is also concerned; during the vicissitudes of the spring and autumnal months the first attacks are usually felt. After the first appearance the disease may not recur for one or two years, or even a longer period; but, as each attack impairs and weakens the constitution, the intervals become shorter, the returns are then annual, afterwards, spring and fall, and when the constitution is at length destroyed, and the system prostrated, the unhappy sufferer has no security at any time. It is remarked that in old cases the local pain is less urgent, but the constitutional symptoms more distressing. We have seen that after the first fits of gout have subsided the limbs recover their suppleness; unfortunately this is not the case when the attacks have been frequent; the joints then become permanently stiffened and tumefied, the ligaments appear drawn, the bursae or sacculi mucosi distended, and the synovia itself is occasionally thickened. In some cases this stiffness is increased by a deposition of chalk-like matter, which becomes concrete, and is compared by Sydenham to crabs' eyes; the part is more or less studded by these depositions, which are easily felt, and may sometimes be seen through the cuticle. Mr. Watson says he knew a man who used to sum up his game at cards with the knuckles. The joints even become anchylosed after their cartilages have been absorbed. A preparation in the Hunterian museum shows the finger laid open, great part of the cartilage absorbed, and the joint filled with this chalk-like appearance. Much has been said and written on these chalk stones; the

ancients supposed them, in part, cretaceous, hence the name; we are indebted to the learned Dr. Wollaston for the best chemical investigation; he found that they contained no calcareous matter whatever, but were a lithate or urate of soda, formed by a combination of lithic or uric acid with the fixed alkali. This salt is friable, and soluble in acids.

Chronic gout we conceive to be a modification of the acute form, attended with less irritation, a slighter degree of inflammation, great weakness of the limbs, with œdematous swellings, permanent distention of joints, with pain falling from one to another, deranged digestion, and nervous oppression.

Irregular gout we divided into retrocedent, and that which was misplaced and erratic. By retrocedent gout is understood that form where, after the fit has come on regularly and been fixed in a joint, from some repellent cause applied, or from weakness and debility of another part, the pain leaves its first position and falls on an internal or vital organ, as the stomach, lungs, brain, diaphragm, or bowels. The misplaced and erratic forms of gout are those in which the predisposition exists, and where it has been partially called into action, but has never assumed its position in a joint; it is misplaced when it fixes on an internal part; it is erratic when it wanders from one internal part to another. We have frequently seen it displayed in anomalous affections, such as dyspepsia, colicy pains, vertigo, cutaneous eruptions which appear to alternate with heart-burn, and other affections of the alimentary canal. It would appear, in these cases, that the predisposition was either not sufficiently strong, or that the exciting causes had not been active enough to fix the disease in the extremities. In some instances, doubtless, where the attacks of this form are violent, the cause is to be traced to constitutional weakness and a relaxed state of the chylopoietic viscera.

The predisposing causes of gout are numerous. That the predisposition is frequently hereditary, is too generally admitted to require proof, but it is also often acquired. Dr. Cadogan, in his "Diss. on Gout and all Chronic Diseases," labours to prove that the taint is not transmitted, and he has been supported by a few writers. Lately, Dr. Scudamore, in his treatise on gout, endeavoured to prove that, though sometimes the predisposition is hereditary, it is much more generally induced by habits of life. All those causes which weaken the tone and impair the powers of the system, producing, at the same time, plethora, and destroying the healthy

action of the stomach and bowels, conduce to establish that habit of body in which gout makes its appearance. Indolence, with inordinate devotion to the pleasures of luxury or of love, high seasoned dishes, with strong and fermented liquors, which increase and provoke the appetite beyond the powers of digestion, the intense application to literary pursuits, mental anxiety, and all causes of this nature. Sydenham supposed it to depend upon a "weakened concoction, both of solids and fluids;" he observes: "Arthritis usually fixes on those elderly persons who have consumed the greater portion of their lives in indulgence and ease, both in the practice of high feeding and of wine, or other spirituous and fermented liquors, and who, from the indolence of advanced life, have relinquished those exercises which they used in their youth." Farther on he continues: "It does not, at all times, wait for age, but appears in those young persons who have had the disease transmitted to them, or who have committed excesses in venery, or have ceased entirely from active employments, indulging the appetites, and using wine and spirituous liquors freely, afterwards taking to those which are thin and cold." (Tractatus de Podagra.)

It has been said by some able writers that active exercise and even labour, with a vegetable diet, using animal food sparingly, and rigidly abstaining from debilitating liquors, would ultimately eradicate the predisposition to gout. See Van Swieten, (Comm. § 1255,) also Hoffmann, (Rat. Syst. Med. vol. v. p. 518.)

It is obvious, then, and the experience of ages goes to prove, that plethora, superinduced on a weakened and depraved state of the system in general, and of the stomach and bowels in particular, caused by indolence, added to long continued and excessive indulgence, is the fruitful source of the gouty diathesis. The following aphorisms contain much spirit:

"Λυσιμελὴς Βακχὴ, καὶ λυσιμελὴς Ἀφροδίτης,
Γίνηται θυγάτης, λυσιμελὴς, Ποδάγρα."

"Of limb-relaxing Bacchus and limb-relaxing Venus is born a daughter, the limb-relaxing gout." A similar sense is also implied by a celebrated poet:

"Ut Venus enervat vires, sic copia vini,
Et tentat gressus, debilitatque pedes."

Hippocrates makes a remark which is usually rendered

thus: Apho. XXIX. "Mulier non laborat podagra, si non menses ipsi defecerint;" but this is incorrect, for women who suffer most from gout, are also often affected with menorrhagia. Dr. Cullen observes: "I have found it occurring in several females whose menstrual evacuations were more abundant than usual." (First Lines, par. 423.) In the XXX. Aphorism of the same section it is expressed, "Puer non laborat podagra, ante veneris usum." Dr. Heberden "never knew a clear instance of gout beginning before the age of puberty." (Comm. p. 36.)

The exciting causes of gout are various. Where the predisposition already exists, many of the causes mentioned as predisponent may excite it into action; thus, excessive repletion, with inordinate indulgence in acescent wines or strong fermented liquors, serve to overpower the system. A sudden and violent change from generous and rich diet, to that which is cold and meagre; immoderate mental excitement; "ira obstetrix arthritidis;" violent and unaccustomed exercise; vicissitudes of weather, particularly cold and damp; excessive evacuations, as from hæmorrhages, strong cathartic medicines, or the like; falls, blows, bruises, and sprains also prove exciting causes. Boerhaave, Van Swieten, and others, considered gout as communicable by contagion; but this idea has become obsolete. "Nulla tamen adhuc obscurior questio est, quam quæ versatur de hujus morbi causis, affectionibusque, et remediis." Heberden.

Having considered gout thus far we pause, in order to sum up its pathology in few words, hoping to present a connected and better assemblage of ideas. The remote cause of gout, then, we have assumed to be that state, or condition of the system, which renders it liable to be weakened and vitiated by the action of various agents. The predisposing causes are hereditary taint, or sedentary habits, co-operating with irregularities of life. The exciting causes are such as, acting upon predisposition, calls forth the proximate cause, or the ipse morbus. This we conceive to be effected by superinducing an unnatural and morbid excitement and plethora on a system already labouring under the remote causes; and this state of things we have ventured to designate as one of indirect excitement. It is proven every day that stimulating and exciting agents act more strongly on the system, when this is reduced and the nervous energy shattered, than they do when both are in health. That, in low and lingering diseases, fever occurs and is kept up by debility and nervous irritation, is admitted on all hands; it appears to us that this fever might

be termed a state of indirect excitement. Abundance of observations and examples, to illustrate the subject of nervous excitability when causes of any kind have weakened them, may be found in the systematic books on nervous diseases. For the old doctrines of the proximate, we shall content ourself with referring to what has been said in noticing the history of arthritis, and to First Lines, par. 526, 527, et seq.

We come next to speak of the curative process. The question has been asked whether this should be attempted, or whether the disease should be allowed to wear itself out upon the unsupported constitution? We have traced the course of successive and uninterrupted attacks of this fell malady, and seen the extent of misery to which many of our species are reduced; premature old age, exhaustion, and deformity, aggravated by every distressing symptom, should answer with conviction. Unfortunately, however, the first symptoms of gout are generally hailed and cherished as harbingers of long life and security; and when the toe is found to be affected, one, fond of ease and indulgence, instead of being alarmed, takes as much pains to display it, as a female does with her first conception. They probably agree with the celebrated author of the commentaries so often quoted, when he modestly consoles himself and "other gouty persons of small fortunes and slender abilities, that kings, princes, generals, admirals, philosophers, and several other great men, have thus lived and died." This is sacrificing to Nemesis in reality: the minds of men are strangely deluded on the subject. Hippocrates offered some ideas on the cure of arthritis, and these were commented upon and added to by Celsus and Galen; but as they confounded the various forms of arthritis, their practice was obscure. They recommended the antiphlogistic plan with many reservations, and allowed that, in cases where inflammation and pain were high, moderate blood-lettings might be used; purgatives were administered with more freedom. This practice continued until the days of Sydenham, who, being gouty himself, bestowed much thought and wrote much on the disease. Where excessive inflammation existed in the beginning of an attack, he used a small bleeding: but proscribed purgatives as having a tendency to invite the pain to the bowels, contenting himself, for the most part, with flannel swathings. His idea was, that the longer and more violent a regular fit of gout continued, the more thoroughly was the system cleansed of the morbific principle, and, by consequence, the longer was the interval before the next paroxysm. In a later treatise, one written in his old age, this

candid and able physician acknowledges that, when the bowels are torpid, the mildest laxatives, such as manna, should be exhibited; but then cautiously recommends to guard the system by means of an opiate at bed-time. See Dissert. de Mictu Sanguineo. This judgment of Sydenham, delivered ex cathedra, served to cramp the profession, even long after the theories on which it was founded had been exploded, and to the present day its influence is felt. Reasoning from analogy, and stepping beyond those narrow principles, let us consider what was the opinion of the ancients respecting the pathology of the various exanthemata and other fevers, particularly the ordinary forms of intermittent. Ascribing all their phenomena to supposed impurities locked up in the system, "seminis morbi," they were most careful to do nothing which might check the indications of nature. Eruptions were established by warm applications, and kept up by tonics and stimulants, in order that, by this process, the morbific matter might be eliminated. Similar impressions rendered them equally guarded in checking the intermittent paroxysm. It would be needless now to point out the absurdities of this doctrine; experience has demonstrated it, as each step of enlightened science serves to lessen the number of opprobria of the healing art. The treatment of gout naturally falls under two heads, namely, that which is proper in the paroxysm to relieve pain and shorten the attack, and that which is proper in the interval to prevent its return.

In a regular paroxysm of acute gout, in constitutions unbroken by previous attacks, where inflammation runs high, attended by pyrexia and acute pain, with much local heat and irritation, a pulse full, frequent, and hard, the skin heated and dry, there can be no doubt of the propriety of using the lancet, and this direct method of reducing excitement should be continued until the most urgent symptoms have abated. From a knowledge that the gouty diathesis is originally founded in weakness, and its excitement on morbid plethora, the good effect of this remedy might be questioned; experience teaches, however, and the analogy of other fevers shows, that an uninterrupted paroxysm exhausts the strength much more than the cautious use of the remedy proposed, and that, in fact, the detraction of blood, by moderating the symptoms, really husbands the strength and powers of the system.

Blood-letting, in severe cases of gout, is by no means a new remedy; Boerhaave and Huxham both agree in its utility, where "violent paroxysms occur in hale young men." In First Lines, the same directions are given, and much

other authority might be adduced. After general bleeding has been carried sufficiently far, local depletion by leeches, by relieving the inflamed vessels, serves to lessen irritation and pain. Some have objected to these, supposing, that though present symptoms are moderated, debility is produced in the joint; why this should be the case, does not appear, and it is evident, that high continued inflammation will much more certainly produce this effect. Musgrave, in his treatise "De Arthrit," recommends the employment of scarification and cupping on neighbouring parts; but we object to these, because the depletion is not from the seat of inflammation, and the wounds may be difficult to heal; besides these, the cups particularly, are quite too painful. The next indication is to relieve those symptoms depending upon the vitiated and weakened state of the stomach and bowels; and this is effected by removing the irritating matter oppressing them. If much nausea prevails, or if nausea alternates with a craving of food, nature points out the remedy; vomiting should be promoted by diluent drinks, and if these do not act efficaciously, a mild emetic, as of ipecacuanha, may be administered with good effect. The propriety of this course is demonstrated by the nature and appearance of the dark offensive matter rejected, and by the great relief which is generally procured; pain is moderated, constitutional irritation lessened, and the stomach becomes settled, leaving the patient in a state of comparative ease; nor do its good effects stop here: the system is, as it were, unlocked, and prepared for the just and regular operation of other remedies.

Objections have been raised to emetics also, on purely theoretical grounds; as the action of this class causes a determination of blood to the head, some have imagined that the peccant principle of gout might yield to the same laws; experience shows otherwise: nervous and arterial influences obey different causes; but, even admitting the plausibility of such fears, whether is the danger of translation greater from the speedy and efficient operation of a gentle emetic, or from the long continued anxiety and retching which attends the neglected symptoms noticed above? Dr. Thomas has said, "however much the stomach may be oppressed with putrid sordes, we should never venture to prescribe an emetic during the paroxysm." Practice, p. 208. This declaration bears its own comment. To proceed, it often happens, after the gentle operation of an emetic has relieved the stomach, that its action is turned on the bowels; this should be promoted by appropriate laxatives, until the alimentary canal is tho-

roughly cleansed; that is, until the extremely fetid and offensive discharges have given place to those which are natural. Various articles and combinations have been offered to subserve this important purpose; those appear to answer best, which, while they possess sufficient activity to cleanse, also impart a tonic and healthful action to the chylopoietic viscera. Deservedly conspicuous in this class is the pulv. rhei compos.; combined with calcined magnesia, as an absorbent, and by which its cathartic powers are increased, it acts with moderation, corrects acidity, and leaves a grateful impression on the bowels. We also use it habitually in combination with some of the more drastic gums, most commonly with equal parts of scammony and aloes, making the mass into a pill with castile soap; a more decided and continuous action is thus produced throughout the whole alimentary course. As, during paroxysms of gout, the urine is scanty and high coloured, strongly imbued with those acids attendant on the disease, and voided with more or less sense of scalding and irritation, it is every way expedient to combine, in our prescriptions, such articles as may exert a salutary control over this important system. The following formula answers well.

℞ Infus. Sennæ,		℥i.
Magnes. Sulph.		℥vi.
Mann. optim.		℥ii.
Tinct. Lavendul. comp.		℥i.
	M. ft. haust. aperiens.	

The last article is added as carminative, and circumstances may render it advisable to substitute for it, tinct. cinnam. vel tinct. cardam. compos. Sulphur, either alone or combined with supertart. potass., constitutes an useful remedy. Soda, also, in different forms, has been largely employed. A late writer recommends the following: "occasional doses of calomel, in conjunction with antimonial powder, compound extract of colocynth, and a little soap." Of this, as a purgative in gout, he speaks highly; directing it to be used every night, or every other night, so long as vitiated and bilious discharges are procured. He says, farther on, "For the purpose of co-operating with these medicines, so as to affect the bowels and kidneys at the same time, without nausea to the stomach, and with the least uneasiness to the bowels, I have experienced the most remarkable success from a draught composed of

Magnesiæ,	gr. xv. ad xx.
Magnes. Sulphat.	ʒi. ad ʒii.
Aceti Colchici,	ʒi. ad ʒii.

with any distilled water, the most agreeable, and sweetened with any pleasant syrup, or with fifteen or twenty grains of extract. glycyrrhiz." Scudamore on Gout, p. 101. This draught is to be repeated at intervals of four, six, or eight hours, according to the changes produced.

Colchicum autumnale has been highly spoken of in gout, after the first stages of excitement have subsided; the extractum colchici enters, with advantage, into several formulæ; the acetic preparation is also very valuable, but of late years the vinous tincture has been more used. Of this there are two preparations, each supported by the preference of able physicians: the one, vinum radicum colchici; the other, vinum seminum colchici. The strength of the wine depends very much on the season of the year, and other circumstances under which the article has been gathered and prepared; for the most part, the vinous tincture of the seed appears to us deserving of most confidence. The baron Stoerk mentions, with particular commendation, its oxymel or syrup. Colchicum, besides its cathartic and diuretic properties, possesses the power of reducing vascular action and calming irritation, imitating, in some degree, the operation of digitalis. Its vinous preparation is eminently useful in those cases which exhibit the hydropic tendency. As a remedy in gout, however, the colchicum should be used with great caution, and where beneficial effects are not speedily derived, other articles had better be substituted. For many curious antiquated notions respecting this medicine, see the article Hermodactylum of the old dispensatories.

Elaterium, as a remedy in gout, has been highly spoken of, and Dr. Sutton recommends it combined with opium; for ourself, we are slow in prescribing this drastic drug at any time, and of its use in gout can say nothing. A single glance at the disease before us serves to show how deeply the hepatic system is impressed; for the purpose of emulging the liver and restoring it to healthy secretion, mercury affords one of the best agents. Many preparations of this mineral have been offered, but we can see no reasonable grounds for preferring any of them to the submuriate or chloride. This remedy should be employed only for the purpose of relieving and correcting the portal and hepatic system. Salivation is always mischievous, by giving a more chronic character to the dis-

ease, by being exceedingly intractable, and by increasing that weakness of the joints always consequent on gouty paroxysms. The operation of the foregoing articles may, oftentimes, be advantageously controlled by the exhibition of mild enemata. Having freely quoted various authorities opposed to the use of purgatives in gout, it affords us singular pleasure to refer to standard authors who have supported their employment. See Van Swieten's "Comm."—Hoffman "de Podag."—Heberden's "Comm. de Morb &c."—also the later works of Cadogan, "Diss. on Gout and all Chronic Diseases."—Gregory, Sutton, and Scudamore. We have already noticed the importance of attending to the renal system, and do not feel disposed to add to what has been said on that subject. It would be useless to name the different diuretics employed, and we shall only observe that the sarsaparilla tea, given with a view to its diuretic and deobstruent properties, is a valuable adjuvant, while the bowels are moderately acted upon, and the alvine discharges assuming a proper appearance Much has been pretended of sudorifics as a remedy in arthritis. Those who maintained the existence of a peccant principle, supposed that, by these, the indications of nature were followed, and that the propulsion of morbific influence to the surface and extremities, was the shortest way of getting rid of it. If by sudorifics were intended those articles which excite perspiration, we are entirely opposed to them as pernicious in the extreme; if, without oppressing and relaxing the stomach by diluent drinks, softness and an uniform temperature can be maintained on the skin, this would be very desirable; and as moderate portions of the antimonial and ipecacuanha preparations sometimes produced this effect, it may be proper to add them occasionally to other prescriptions, and we are persuaded that excitement is much more readily equalized than by any course of sudorifics.

Of the influence of opium in relieving the pains of a paroxysm, the celebrated Dr. Warner speaks with great delight in his own case. It must be kept in view, however, that he used it late in life, when there must have been less of inflammatory diathesis present. Justice will not allow us to impeach the testimony of this gentleman, but, in our hands, the stimulating and heating action of the remedy produces any thing rather than relief, while symptomatic fever prevails to extent. It is admitted, that in any febrile or inflammatory disease, where pyrexia runs high, opium aggravates the symptoms; the same admission should be extended to all regular acute paroxysms of gout. After inflammation has sufficiently

subsided, and in old cases, opium is, indeed, "a gift of the gods." Alone, or combined with other medicines, its soothing influence is speedily felt and acknowledged. Whenever opium is given to relieve pain, the quantity should bear proportion to the violence of that pain; as the pain in gout is very great, it becomes necessary gradually to increase and repeat the dose, until the desired effect is produced; if the portion is too small, irritation and anxiety are augmented by its stimulating properties. The black drop is an excellent preparation; verjuice possesses the power, in an unaccountable degree, of strengthening the powers of opium, while, at the same time, it lessens the disagreeable effects upon the system. In consequence of the great excitability always present, the oldest opium should be carefully selected. The lactucarium of Dr. Duncan, sen., or the concrete milky juice of the lactuca sativa, answers well as a mild narcotic; as a weaker medicine, it is used in larger doses, as from two to three grains repeated p. r. n. This article is less apt to produce headache and flushings than the ordinary narcotic. In the list of sedatives, the hyosciamus niger is said most to resemble opium; we have no knowledge of the article in gout; in scirrhous, scrofulous, and cutaneous affections, when it acts kindly, it is a most useful medicine; but, from the uncertainty of its operation, it would appear a doubtful remedy in gout, where it is necessary to know precisely what we are doing. Conium maculatum, or cicuta, possesses many properties which would promise well in gout, if we could arrive at accuracy in the mode of exhibiting it, so as to command those virtues. The datura stramonium and the solanum dulcamara have also been highly recommended; this last adds to its narcotic and soothing qualities a more uniform action upon the kidneys and bowels, and may, at a future period, form an important remedy in gouty affections. Although we cannot recommend the use of these articles at present, in the cure of this complaint, there are strong grounds to hope that, at no very distant date, their properties may be so well understood and controlled, as to be used with safety and great advantage. Some of the strongest objections to opium do not apply to these, and we trust that the hitherto unavailing attempts to master a subject so full of interest will not discourage the profession. The diet must be strictly attended to, or all labour is in vain. Articles should be chosen which are nutritious, without being stimulating or acescent; the debilitated stomach is better able to manage fluids than solids. Ripe subacid fruit, such as oranges, or grapes, or roasted apples, are,

perhaps, the best diet. When the stomach demands something more cordial, such articles may be added as produce tone, rather than stimulation; farinaceous seeds, seasoned with wine and nutmeg, jellies and whey, &c. may be allowed. The drink should be simple, and water alone is the best, except where debility calls for something else, when such addition may be made as the judgment of the physician deems proper. Acid drinks are not allowable, though, sometimes, even lemonade is taken with impunity.

We proceed next to consider such local applications, as may tend to lighten the sufferings in regular paroxysms of gout. Those approved of by us are extremely simple, and may be summed in few words.

Conceiving that constitutional remedies can alone overcome a constitutional disease, the course now to be mentioned is merely intended to palliate the urgency of symptoms. We have already described the highly inflamed, and otherwise disordered state of the part, and, after speaking of the propriety of general blood-letting, noticed the relief obtained from capillary depletion by means of leeches. For our ideas of this, and other means of local detraction, we refer to that part of this paper. As a farther means of reducing inflammation, blisters have been recommended, reasoning from analogy, and considering their beneficial operation in cases of local inflammation in general; but experience does not justify their employment, for, besides the troublesome sores caused by them, they are apt to induce translations. The same objection is applicable to other irritants, as the stinging with nettles or burning with moxa. (See First Lines, par. 564 to 566.) Fomentations, and warm applications in general, may be objected to on the same grounds. It has been some years since Dr. Kinglake proposed the use of cold water as a remedy in gout, and he cites very many cases to prove its efficacy. Van Swieten tells us of an officer, who, finding himself much exposed to cold, was in the habit of rubbing his gouty feet with snow, from which relief was always obtained, and we are informed that the celebrated William Harvey, who died at a great age, used always to immerse his foot in cold water, when he perceived the approach of paroxysms. In our knowledge, this remedy was resorted to by two refractory patients, when all that could be done was to fortify the stomach by a cordial; in both these cases high praise was bestowed on the bath. We are far, however, from recommending this plan, as it is attended with hazard; but in medicine, facts, rather than theories, should be recorded. Dr.

Scudamore has offered a substitute for cold water, which we greatly prefer. It occurred to this gentleman that, by the process of evaporation, the undue heat of the part might be carried off without the danger of retrocession which attends the other method; he says, (Treatise on Gout, p. 138,) "I have made very free use, and with the best success, of a lotion composed of one part of alcohol and three parts of misturæ camphoræ, applying it to the affected part by means of linen rags, first rendered just agreeably lukewarm by the addition of a sufficient quantity of boiling, or very hot water." In adding our testimony we shall only recommend that, when this or other applications of a similar kind are made use of, the gastric symptoms be attended to, and, if not contra-indicated, to fortify the stomach by a few drops of the oleum terebinthinæ rectificatum, or some light and sound cordial. After this process, the part may be lightly covered with a little well-carded cotton, or a single fold of flannel.

Chronic gout.—Under this head we shall have to make but few additions. We have stated it to be a modification of the acute form, attended with less irritation, a slighter degree of inflammation, great weakness of the limbs, sometimes attended with œdematous swellings, permanent distention of joints with pain falling from one to another, deranged digestion, and nervous oppression.

The local symptoms here are less urgent than in the acute paroxysms, but the constitutional are much more distressing. The period and duration of attacks are less regular and the recovery less perfect. In this form the liver and kidneys sympathize deeply. The former is sometimes found tumefied and adhering to the stomach and diaphragm, having its cyst, or gall bladder, occupied by concretions. In the latter, calculi may be found imbedded to a considerable extent. It is in this form of gout, also, that chalk stones are more generally met with. We have noticed the external appearance and structural derangement in another place. The cause of chronic gout may, for the most part, be traced to three fruitful sources. The frequent occurrence of the acute form; misrule during these paroxysms, as the substitution of a heating and stimulating course in place of proper constitutional remedies, together with the improper use of warmth, fomentations, and loads of flannel swathings, which relax the limb and produce chronic debility; and thirdly, to the employment of nostrums. Other causes do sometimes produce it, such as salivation, hemorrhages, &c.; but these cases are more rare. In treating chronic gout, rules of practice may easily be

drawn from what has already been said; these should be modified to suit the condition of the system, and the careful physician will look well to that condition. As chronic is less urgent than acute gout, more time is allowed to the applications for relief. The symptoms should be well weighed and critically balanced, while such means are employed as, in their course, are demanded. Our prescriptions should be less active, but more perseveringly attended to, and they should be rendered more cordial, according to circumstances. Here, opium exerts its most beneficial influence alone, or in combination; its value is not easily expressed, for there is scarcely a symptom which is not, more or less, mitigated by its use; but while employing this narcotic, the state of the bowels should be carefully attended to. We should deem it unnecessary repetition to go over the best method for cleansing the viscera and overcoming distressing dyspepsia. The diet should be light, nourishing, and easy of digestion; if called for, sound wine, or good brandy, may be used in moderation, but, perhaps, very old and pure whiskey, when procured with care, is preferable; at least, we have known this employed with good effect, when other spirit could not be used. If tonics are applied in gout they require much caution. Where debility is distressing, the stomach may be braced by small portions of chamomile infusion, or cinchona bark. This last has been highly spoken of. By a late author, the virtues of cinchona, in gout, are compared to those which it is known to possess in intermittent fever. The muriated and ammoniated tinctures of iron, in an infusion of cascarilla, are also valuable; but, for the most part, the appetite is found fully equal to the powers of digestion, and should not be increased beyond. When pain and irritation have sufficiently subsided, the limbs are to be strengthened gradually by exercise. Friction, with the hand or flesh-brush, offers an easy and convenient method of exercising a stiffened and painful limb. This remedy promotes the circulation, and increases the powers of the absorbent system. When it can be done with convenience, the patient should endeavour to walk a little, and by degrees extend his efforts; not, however, so as to endanger a return of inflammation. Walking or riding on horseback are the more favourable kinds of exercise, but where these cannot be resorted to, the carriage, and often repeated friction, should not be neglected. This course imparts vigour and tone to the general system, while it serves to prevent, in a measure, permanent local stiffness and debility. If the limb is swollen, or inclined to œde-

ma, it should be rubbed with some stimulating embrocation and supported by rollers of flannel. Salt bathings, as near the strength of sea water as possible, tend remarkably well in subserving the tonic purpose.

Having considered the regular forms of gout, we proceed next to notice those which are irregular.

Irregular gout was divided into that which is retrocedent, and that which is misplaced and erratic. A regular paroxysm of gout may be repelled by a variety of causes; most of these have already been mentioned while speaking of improper remedies, as warm fomentations, local irritants, the action of damp and cold, or the presence of crude and offensive matters in the primæ viæ. The stomach is the organ most frequently attacked in these forms, and the symptoms are exceedingly violent; distention and spasm, a great sense of oppression, with weight and coldness, accompanied with nausea, threaten the life of the patient, and call for immediate relief. In this state, from observing the symptoms of inflammation usually attendant, most practitioners concur in using the lancet. The remedy should, however, in this, as in all cases of gout, be employed with great caution. If pain is mitigated, the pulse becoming softer and more regular at the same time that it is more open and developed, with a general abatement of distress, we are encouraged to proceed; but if these favourable changes do not take place, it will be proper to sheathe the lancet. Our next step is to allay nausea, and this is best effected by unloading the stomach. Vomiting should be promoted by diluent drinks, or the emetic mentioned before; afterwards, employing such means as are mild, but speedy and effectual, for evacuating the bowels. We should not allow alarm and confusion to deprive us of judgment; this should be steady and sound, dictating such practice as is founded on clear views and deep consideration. The object now is to support the stomach with cordials and aromatics; mulled wine or brandy are commonly used. The efficacy of these is increased by antispasmodics, such as musk, asafœtida, or the volatile alkali. Opium is invaluable; it may be combined with aromatics, and the spiced tincture is one of the best preparations; combined with camphor, musk, asafœtida, or other antispasmodics, it furnishes most useful prescriptions. As a diffusible stimulant, and one which makes a strong and beneficial impression on the stomach, the oleum terebinthinæ rectificatum is highly useful; this article, from its nature, is calculated to relieve several symptoms in gout. While these means are employed, it is proper to invite the

disease back to its original seat. This is done by pediluvia and fomentations, sinapisms to the soles of the feet, and blisters to the ankles. Dr. Cullen recommends the blister to be applied to the breast or back, but his notion has been denounced as visionary and injurious. Dr. Scudamore used his lotion on the epigastric region, and, as he says, with good effect; but we have never seen a case which did not yield to the timely employment of the course already laid down. When the brain is attacked, symptoms of apoplexy, delirium, or palsy, are consequent, and should be treated, at first, on general principles. The patient must here bleed freely, either from the arm, or temporal artery; the hair is to be removed, and cold applied, while proper remedies are addressed to the feet. If the lungs are affected, or the diaphragm, symptoms of asthma, or asthma and spasm supervene, and point out the only additions which are important to the rules laid down. Other internal parts, as the kidneys, or bowels, are often attacked, with slight modifications, but they are managed as cases of idiopathic inflammation.

The misplaced gout, or that form which originally seizes upon an internal part, together with its erratic varieties, will now need but little space. When distressing, it is managed as retrocedent: when only displayed by anomalous symptoms, its cure depends more on general good management, and on those rules to be laid down under the following head.

Prophylaxis, or that course of life which is proper during the interval, to overcome the gouty diathesis. Attention to the nature and causes of gout, will furnish us with the best ideas on this part of our subject. Predisposing causes having induced a morbid plethora and excitement, on a system labouring under a remote cause, it becomes necessary to remove the one and counteract the other. This is effected by such a course of life, as will impart tone and energy to the system, while all intemperate indulgences are abandoned. The patient should make up his mind on this question, namely, whether he will live a gouty and uncomfortable life, and die a gouty, and perhaps a premature death; or, whether he will resolutely persevere in that course, which is to free him from the one, and prevent the other? The cardinal rules are, temperance in all things, and exercise, with such occasional use of medicine as the symptoms may demand. In laying down rules of regimen, it will be proper to consider what have been the previous habits. It is easy to understand that these must have great influence; a person accustomed to gross and high seasoned dishes, indulging in variety, and

exciting a false appetite by strong potations, cannot, with impunity, relinquish these at once, for prostration would be the consequence. The young epicure, however, should resist his propensities in time; if the constitution have not been broken, he may, in a very short time, regulate the appetite with perfect safety. It is not our intention to carry this point as far as physicians have recommended; we wish to support the system in such a manner, that tone and vigour may be acquired; avoiding, at the same time, all causes of plethora. For this purpose, the food should be perfectly plain, light, and nourishing; vegetables the least apt to cause acidity, milk, bread made of rye flour, and mush of the same, soft boiled eggs, jellies, and such like articles, are of this description. Animal food is allowable in moderation; not oftener, as a general rule, than once in the 24 hours; it may be served up as broth, or soup. If solid meats are sought after, such should be selected as sit lightest on the stomach, and care must always be taken not to overload or oppress this organ. Drinks should also be simple, and water alone is the most proper, unless symptoms of debility, or long standing habits of indulgence, call for something more. Sound old wine, brandy, or as we said before, very old and pure whiskey may then be added in such quantities as to afford relief; but not beyond this point. Van Swieten supposed that rigid abstinence and laborious exercise would cure gout, and in his commentaries, we have several humorous anecdotes to this effect. Directions for exercise, are also relative: one, for a long time accustomed to a sedentary life, could not bear what would be moderate exertion to the more active, and it should be recollected that fatigue produces exhaustion and debility, rather than tone. It has been said that walking, and riding on horseback, are the methods of exercise most esteemed, and that when these cannot be employed, the carriage is useful. Frequent frictions of the whole body with the flesh brush, particularly about the joints most weakened and liable to attacks, should not be neglected. In the absence of pain, no risk is incurred; but signal benefit arises from bathing the joints, especially the ankles, in cold water. This may be usefully impregnated with salt, or rendered more strengthening by oak-bark. We prefer sea-bathing where it can be enjoyed, to all other kinds, taking care to use the flesh brush or flannel until a glow is established on the surface. The mind should be preserved elastic and light, and as far as possible filled with agreeable impressions. When symptoms of dyspepsia occur, recourse should be had to gentle medicine, and any of the for-

mulæ given above may be employed; for the most part, magnesia, alone or combined with rhubarb, will answer: as a corrective in this state, the castile pill is valuable. When this course is once entered upon, it should be persisted in throughout life; for no lasting cure can be effected, without uniform attention to the rules of the hygieine.

We come next to speak of rheumatism. Seceders from established doctrines, too often suffer their prejudices to hurry them into opposite extremes, and in shaking off the dogmas of an established sect, human reason, fallible and wavering, oscillates from error to error, until the steadying hand of experience fixes it on truth. The history of the disease before us offers an ample field for such reflections. Under the head of arthritis, was noticed the guarded and cautious manner of the ancients in approaching our subject, and we have had, and shall have occasion to lament the rash attempts of modern practice. Rheumatism is an affection of the tendinous structure, occupying principally the fasciæ, the ligaments and bursæ, the tendons and their aponeurotic expansions, and penetrating the muscles by means of those thecæ, which involve and bind together the fasciculi of fibres of which these are composed. From a view of the tissue which is the seat of this peculiar inflammation, we should naturally expect to find the most acute pain in those parts most abounding in this structure, and accordingly the larger joints, such as the knees, hips, loins, and shoulders, suffer particularly. By Dr. Carmichael Smith, rheumatism was supposed to occupy the muscular fibres, and in Med. Comm. Dr. Motherby fixes it in the cellular substance, while others declare the coats of the arteries themselves, to be the true seat of disease. It would be useless to contend against these opinions separately, and we shall only observe, that, when inflammation is neglected in one or the other of these systems, it manifests a disposition to run on to suppuration; this is very rarely the case in rheumatism, and the sudden translations of this disease, show a wide difference between it and common phlegmon. Various names have been applied to designate the location of rheumatism; when the muscles are the seats of pain, the term myositis is used, the old distinctive of arthritis, expressing more particularly the affections of the joints, and these again are subdivided, in order to avoid confusion.

In practice, rheumatism is considered under two heads, the acute and chronic. Although several late writers have endeavoured to explain an intermediate grade, as the subacute, it appears an unnecessary step, for these diseases only differ from each other, as they are modified by circumstances.

Dr. Haygarth considers the period of life between the ages fifteen and twenty, as most liable to attacks; but this is too limited. It would appear, that when arterial action is balanced, and the tone and habit of the system full and vigorous, with prevailing plethora, persons are most easily acted on by exciting causes. It often is met with much earlier than the time fixed on by Dr. Haygarth, and every day we see the decline of life rendered uncomfortable by it. Any temperament may be invaded, the purely sanguine, is that, however, which is oftenest affected. Men are, from exposure, more liable to rheumatism, than the other sex, on the authority just quoted, in the proportion of four to three. The remote cause of rheumatism then, is to be traced, for the most part, to a sanguineous, excitable, and plethoric habit; such agents as tend to increase this excitability, beyond what the vis vitæ can control, produce a state of relaxation and weakness, on which exciting causes may afterwards act, thus founding a predisposition. The gouty diathesis is also a fruitful predisposing cause, and on it is established that form of disease to which the term rheumatic gout, is applied. Predisposition to rheumatism is frequently hereditary, and may be transmitted along with temperaments, resemblances, and idiosyncrasies. The exciting causes of rheumatism are, sudden and violent changes in the weather; imprudent exposure to damp and cold; partial application of cold, as a stream of damp air from a door or window, when the body is heated; sitting with the back exposed to such currents; wearing or lying in damp linen; or any of those causes which tend to check perspiration. Injuries, as from falls, blows, or other accidents, also conduce to local weakness and invite attacks. It is worthy of remark, that when it arises from these last causes, it speedily assumes the chronic form. An attack of acute rheumatism is usually preceded by more or less of oppression or languor, chilness and shivering, alternating with flushings, and a loss of appetite, with aching pains and soreness over the whole body. After a time local symptoms appear, sometimes in one or two, sometimes several joints, extending along the course of the muscles, and much aggravated by every attempt to move. The pain is at first sharp and lancinating, afterwards becoming more dull, heavy, and distressing. Pyrexiæ attend these symptoms, and the pulse is full and hard, or sharp and frequent; but sometimes it is remarkably soft. It usually happens, that although the pain is more severely felt in some particular joint, there is a disposition manifested to wander from one to another, as

from the knees to the hips, from the shoulders to the clavicles, &c.; and this erratic state seems in proportion to the degree of pyrexia and irritability. The pain does not often remain long in the same point, but after having fallen on other parts, it may return, and in this manner the disease continues for a long time. Cases occur, in which the pain, instead of passing from one joint to another, fixes in the muscles, as in those of the back, or of the chest, or of some other parts; and metastasis frequently takes place to internal parts, as the heart, brain, bowels, diaphragm, &c. Although the patient is generally admonished of the approach of rheumatism—by such symptoms as have been stated to precede the local affection—yet there are varieties, and frequently pain in a part is felt, without the previous warning. During the day, pain and irritation are comparatively moderate; but as the evening advances there is an exacerbation in pyrexia, and when the patient is warm in bed all the distressing symptoms crowd upon him; sleep is prevented, while restlessness and anxiety serve, in their turn, to increase the fever. Copious perspirations are extorted, as if by excess of pain, and these appear rather a leakage from the vessels than any effect of cuticular action. The part most affected is either hot and dry, or imparts a clammy sensation to the hand. Pain and redness in a joint are some times lessened by the coming on of swellings, and this relief has been accounted for by supposing that the vessels of the diseased structure have poured out serum into the surrounding cellular membrane, thus deriving the benefit of topical depletion. Swellings, however, do not always take place, nor are they always attended by salutary effects.

During the exacerbation of this inflammatory fever, the urine is high coloured and small in quantity; but afterwards it is more copious, depositing lateritious sediment, mixed with mucus.

An attack of rheumatic fever may continue with more or less violence, from two to three, or six or eight weeks, according to circumstances. It seldom, perhaps never, proves fatal, unless by metastasis to vital organs. These transitions, according to the experience of the celebrated Dr. Baillie and Mr. Dundas, are more apt to affect the heart than any other part. When this has been the seat, dissections manifest great derangement: the pericardium is often distended, and when cut into displays a spotted surface, with streaks of inflammation; the contained fluid, or liquor pericardii, is more or less thickened or turbid, while the heart itself is enlarged and

flaccid. If the brain is affected, the symptoms are those of compression, or apoplexy, and the morbid appearances nearly resemble those of idiopathic cases. In treating acute rheumatism, we should carefully discriminate between the symptoms, for much extravagance has found its way into modern practice. On purely theoretical principles, the lancet has been adopted, almost to the exclusion of other remedies, and in consulting the works of Sir John Pringle, Dr. Rush, and several others, we find them devoted to it. Mislead by the buffy appearance of the blood, we are directed to continue its detraction until it shall have assumed a natural and healthful condition; but this advice is vague and dangerous. Should we continue to draw blood in inflammatory rheumatism, until the pulse sinks, and the strength is prostrated, the last ounce *may*, and generally will, exhibit this peculiar coating. There is a wide difference between that state of excitement, kept up by the over action of the heart and arteries, and that produced by irritability and pain. It is very certain, that where blood is too profusely drawn, the disease becomes more lingering and intractable, relapses more frequent, convalescence more slow and tedious, and chronic rheumatism fixed in the system, in place of acute.

The ancient fathers entertained very different impressions respecting this disease, and having confounded it with arthritis generally, wandered into the opposite extreme; bloodletting was by them as much restricted as it is now abused. So late as the days of Dr. George Fordyce, we find it altogether forbidden; that eminent physician declares, that having observed the dangers resulting from bleeding in acute rheumatism, and particularly from metastasis, he had altogether abandoned it, and gives as the result of his experience, a great number of cases, treated successfully. See (Elem. Pract. Phys. 3d Dissert.) Perhaps there is no case in which the golden rule of Ovid could be better applied. It is generally observed that the first attacks of rheumatism yield more speedily than those which are subsequent. When the inflammatory diathesis prevails to a considerable degree in the commencement, attended with much heat and restlessness, while the pulse indicates irritation, and is hard and full, or sharp and frequent, blood should be drawn in such quantities as to produce a decided impression on the heart and arteries. The first bleedings should be copious and drawn from a large orifice, and the control which this exercises over the disease, together with the appearance of the blood drawn, will serve as an index to other bleedings. In examining the blood, we

are not to be directed so much by any single appearance, as by its general condition. In a conversation with an eminent practitioner of this city, on the subject of general inflammation as displayed by the blood, our attention was called to a particular appearance, which we had not noticed, and which we do not recollect to have met with in any book. If the blood has been drawn in a white basin and suffered to cool, so that the small drops which have flashed on the side of the vessel, may have become dry, minute specks, as if of red precipitate, may be perceived adhering; the same appearance is discoverable on the blade of the lancet. This the Dr. has observed for several years, and thinks, is one of the most unerring indications of inflammation. As soon as the force of the general circulation has been sufficiently moderated, the lancet should be laid aside. For many useful remarks on the subject of cautious bleeding, we refer particularly to the works of Sydenham and Boerhaave. Where there is metastasis to the heart, brain, or lungs, copious and repeated venesection, cannot be dispensed with. These forms must be treated on general principles, and as idiopathic affections. As one of the best remedies for reducing inflammatory action, early attention should be given to purgatives, and those are well suited which combine a hydrogogue, with their other powers, and which at the same time, promote the discharge from the kidneys. Jalap added to equal parts of the sulphate and super tartrate of potash, forms a valuable medicine; the neutral salts, alone, or with magnesia, are also very serviceable. When stronger articles are called for, calomel, or the extract of colocynth, may be used. These and similar articles, should be continued until the phlogistic diathesis has been controlled, and the hepatic system brought into good order. After the bowels have been well evacuated, and when arterial action is sufficiently reduced to admit of diaphoretics, some of the articles of this class are employed with very manifest advantage. By imparting a healthy tone to the skin, and equalizing excitement, they tend to correct that morbid state on which depends the leakage or sweatings, which exhaust the strength, without proving critical, the temperature on the surface is rendered uniform, and a soft and agreeable feel induced. Small portions of tartarized antimony, or ipecacuanha combined with rhubarb, or one of the neutral salts, may be given. The pulvis antimonialis, particularly when united with calomel, has received high commendation, and is one of the best medicines for this stage. As the force of inflammation subsides, the strength of the

diaphoretic is to be increased, the pulvis ipecacuanhæ compositus may be employed, bearing in mind, that it is not a copious discharge, which is desirable; but an uniform temperature, with a soft and equable state of the skin. The flannel of the body should be changed frequently, and not suffered to become imbued with perspiration, or the pores are clogged, and the patient is more liable to chilly sensations. The urgency of pain in acute rhumatism, has induced many practitioners to prescribe narcotics. Dr. James Parsons was in the habit of using opium freely in all stages, and he declares, that no injury had ever been done by it in his practice, on the contrary, that the attacks were very much shortened, and convalescence rendered more speedy. Dr. Hamilton also speaks very highly of this article in combination with calomel. After the measures pursued above, and when the system has been prepared for its reception, opium certainly affords great relief, and may be administered with perfect safety, either alone, or in union with calomel or colchicum, or with one of the diaphoretic powders. Too much mischief results from its improper use for us to recommend it lightly. In the early and inflammatory stages of rheumatism, it is not only dangerous, but seldom fails, by its stimulating properties, to increase the heat, irritability and pain: it is dangerous, in the large doses usually prescribed, by augmenting congestion, and by inducing a strong determination to the brain. From its power of controlling the circulation, digitalis has been strongly recommended; the operation of this medicine, however, is too uncertain to justify confidence: when it does act kindly, the effect is very beneficial. Hyosciamus, as nearly allied to opium, in its narcotic properties, has been introduced; it is unquestionably free from some of the objections urged against that article, but like digitalis, it is too variable in its operation to be long persisted in.

Of Tonics. Were we to follow the speculations of various writers on the use of tonics in the cure of rheumatism, there would be no end to our inquiries. Fifty years ago, Dr. Haygarth proposed the employment of cinchona bark in the early stages of acute rheumatism; his plan was to evacuate the stomach and bowels by the use of tartarized antimony, and then to administer the bark freely: he quotes the authority of Dr. John Fothergill in support of this practice. (See Clin. Hist.) Many subsequent writers have advocated this method; as we have never seen cinchona used early in the disease, we shall content ourself with extracting the following. (First Lines, part 468.) "The Peruvian bark has been supposed

a remedy in some cases of this disease; but we have seldom found it useful, and in some cases hurtful. It appears to me to be fit in those cases only, in which the phlogistic diathesis is already much abated, and where, at the same time, the exacerbations of the disease are manifestly periodical, with considerable remissions interposed." When inflammatory symptoms have subsided, this and other tonics are very proper. The diet should be attended to as a matter of great importance. While inflammation prevails, the less the patient takes of nourishment, the better; and solid food is to be avoided. Such drinks as barley water, jelly and water, and the simplest whey, will be fully sufficient for all useful purposes. Attention to this, will enable us to throw aside a vast deal of medicine. Strict regimen should be observed throughout the convalescence, and such additions only made, as are necessary to support the system, and recruit its powers. The local applications in acute rheumatism had better be very simple, for the hasty hand of empiricism may do much mischief. When pain wanders incessantly from one part to another, constitutional measures alone are to be preferred. Warm fomentations, and cold applications, are both dangerous, by weakening the part, and rendering it more liable to be seized again, and farther, by inducing permanent debility: besides these, they cause metastasis. If there is much local inflammation, topical depletion by means of leeches, constitutes an useful auxiliary to general bleeding; and the heat of the part may be safely lessened, and pain much alleviated, by the process of evaporation, as recommended in gout.

Chronic Rheumatism.—It is difficult to set the precise bounds between the acute and chronic forms of rheumatism; although, when these are fully established, a very marked distinction is immediately perceived. The term chronic is generally understood to apply when arterial and inflammatory action have nearly or entirely subsided, and the strength is much exhausted; but where irritation and pain continue to a greater or less degree, either fixed in a part or wandering, Dr. Bardsley, in his "Medical Reports," has called this a state of passive inflammation. Chronic rheumatism comes on either as a consequence of the acute; or, in persons predisposed, it is excited by falls or other accidents; by exposure to damp and cold; by irregularities in life, or by violent exercise and exertion. The syphilitic taint also, by impairing the constitution and weakening the system, lays it open to obstinate and painful forms of this disease. From whatever cause it arises its commencement is marked with more or less

of the inflammatory diathesis, which soon gives place to the atonic form. In this lingering disease the pain is of a dull and heavy character, varied by remissions and exacerbations. Increased excitement, which does not always amount to fever, is perceived as night comes on, pain becomes more distressing, the pulse is soft and slow, sometimes quick and irritable, but seldom frequent. The temperature on the surface of the body is unequal, and perspiration partial, while the seat of pain is either dry, or covered with cold, clammy sweat. The patient cannot describe his wretchedness; and these symptoms continue, or alternate with each other through the night. As morning approaches this state gradually sinks into remission, when the pain becomes less urgent. If refreshing sleep is procured at all it is during the day. In this manner the strength is undermined, the face loses its fulness, the countenance assumes a peculiar expression of watchfulness and anxiety, the muscles of the part affected shrink, and are rigid, or preternaturally relaxed, the tendons become stiff and drawn; from the swelling of the bursae and other parts about the joints, these become swollen and stiffened while the limb generally wastes away. There are some cases which appear more local, as lumbago, sciatica, and painful affections of the face and neck. These forms of the disease come on and last, with more or less violence, for a time, after which they subside, leaving only a weakness, which weakness becomes a predisposing cause for future attacks.

Cure.—In the treatment of chronic rheumatism several indications are to be attended to. It will be proper to examine into the exciting cause; into the degree of inflammation present, and into the age and situation of the patient, as also into the stage of the attack. It is evident that the exciting cause must materially influence the practice, and that those forms which follow ill cured acute rheumatism, and those arising from cold, or injuries, and irregularities, must admit of some peculiarities amongst themselves, and, in many respects, differ from those which are induced on the syphilitic taint, or after an ill conducted mercurial fever. The degree of inflammation is an important question, and must be determined by prevailing symptoms. The age and condition will also greatly modify the treatment; for those who possess good constitutions and easy circumstances, offer much more hopeful cases than those in whom the system has been broken down by age and previous infirmity, or by want and intemperance. The stage of the attack requires also much consideration; for that course which is applicable in the commencement will by no means answer

during subsequent periods. It is probable that inattention to these circumstances has caused the great oscillations which have been observed in the remedial process. Very extensive catalogues of articles, for both internal and external application, have been proposed at different times; and many of these have been introduced with great applause by some, while other physicians of equal judgment have laid them aside as almost useless. This diversity can only be accounted for by supposing that the different indications of cure have not been considered. After having regulated the sanguiferous system, by the rules laid down under the head of acute rheumatism; we should turn our attention to the stomach and bowels, and determine what share they have in producing or keeping up morbid associations. Where there are appearances of bile and acidity, with disordered stomach, an emetic of tartarized antimony should be premised, as the readiest means of overcoming these associations, and, after a gentle effect, its action may be turned on the bowels. Farther evacuations are promoted by means of calomel, alone, or with colocynth, combined with opium. After these medicines the discharges will, for the most part, be found to consist of dark and offensive matter, showing hepatic derangement, and a vitiated condition of the alimentary canal. When the system has been thus unlocked, mild laxatives are fully sufficient. The neutral salts, as recommended above, are useful in moderate doses, as they join a diuretic to their other properties. Too much can scarcely be said in praise of sulphur, its action is very mild, but at once kind and effectual; and the change produced on the skin is so beneficial as not to be overlooked. If there should be languor in the renal system, slight additions may be made of the super tartrate of potash. Our next step, and that on which we principally rely for overcoming the disease in the constitution, is the just and proper exhibition of diaphoretics. The object here is not to produce a copious discharge; but to keep the skin relaxed, and in a perspirable state; or in a state of transpiration, as the term is explained by M. Magendie, in the 370th page of his physiology. When this course is entered upon, such a selection of articles should be made, and such rules observed, as will enable us to derive all the advantages from its continuance. After this degree of diaphoresis is once established it should be kept up for a considerable time. If it is frequently excited and as frequently suffered to subside, or is checked, exhaustion and debility follow, without commensurate benefit.

While there is much irritation and the system is susceptible,

the pulvis antimonialis constitutes one of the best prescriptions; this may be alternated with combinations of antimony or ipecacuan, with calomel and opium: the use of the two last articles has been already supported on the high authority of Dr. Hamilton. It may be proper after these to introduce more cordial articles, as the pulvis ipecacuanhæ compositus, and the liquor ammoniæ acetatis. When the skin has become soft and of more equal temperature, and regularity is observed in the various excretions, but at the same time the powers of the system are found to be languid, it will be advisable to change the character of our medicines. Polygala senega in decoction, is tonic, at the same time that it acts upon the skin, and is, therefore, a valuable article at this stage of the disease. Guaiacum officinale has been highly extolled on account of its cordial and invigorating properties; exhibited either in decoction, or emulsion, it increases the powers of the absorbents, and promotes excretion. For this purpose, also, the savin is justly entitled to notice. Dr. Percival speaks very highly of the oleum jecoris osselli, and many cures are accorded to this article: on many accounts we prefer the oleum terebinthinæ rectificatum; it is less likely to offend the stomach, and has a more immediate relation to the seats of the disease. Where the syphilitic taint has any thing to do in keeping up rheumatic action, after a judicious course of mercury, the best effects are obtained from mezereon and sarsaparilla. In order to strengthen the system several tonics have been mentioned, and those from the mineral kingdom particularly insisted on; as the preparations of steel, iron, or arsenic. There appears, however, no reason why any of these should be preferred before peruvian bark; particularly as the modern preparation is not liable to the objections formerly urged, against the bulk of that article. The muriated and ammoniated tinctures of iron are at times valuable: but for arsenic, in any of its forms, we doubt whether good has ever been produced; its tonic power has never been displayed to us; but atony and oedema, unquestionably do follow its use if persisted in. Every useful tonic purpose may be subserved by the cinchona, alone or combined with seneka; and from the other barks, as colomba, kino, cascarilla, &c. After these the use of mineral waters is eminently serviceable. To promote convalescence, the patient should be encouraged to visit such springs as possess aperient and tonic properties; such as the white and salt sulphur of Virginia, and the warm springs, the baths of which are particularly fine. The sulphurous and acidulous saline and chalybeate waters of Saratoga, and those of

Ballston in N. York, are also found to produce great benefit. Exercise, in this stage, is one of the best remedies; this should at first be moderate, and afterwards increased, so as not to produce too much fatigue. The skin must be carefully protected by flannel or worsted hosiery.

If these means do not effect a cure, the desired end is often obtained by inducing a very slight degree of ptyalism, which is to be persisted in, for a longer or shorter time, according to circumstances. Dr. John Fothergill was in the habit of prescribing calomel, in grain doses, as a tonic. This practical and able physician perceived that decided salivation, as it could not be maintained long enough to overcome this chronic disease, was injurious; and he styled as tonic, what we should ascribe to the alterative influence of mercury. It should be recollected that chronic rheumatism is not to be speedily overcome by any course: no impatience, or discouragement, ought to tempt us to desert our patients in this lingering and trying affection; on the contrary, the greater the difficulty, the more strenuous and unremitting should our exertions be; and the spirits and strength should be soothed and supported, by the prospect of ultimate relief.

"Hoc maximè officii est, ut quisque maximè opis indigeat ita ei potissimùm opitulari." *Tully.*

External remedies constitute an important part of the curative process. We have pursued our plan, in giving them a separate head, in order that those means more immediately constitutional, might not be interrupted. The state of the part which is the seat of pain will entirely direct us in selecting proper applications. If much redness with swelling is present, as in the early stages, topical depletion, by means of leeches, should not be neglected; and this may be beneficially followed by evaporating lotions, which, as stated above, effectually reduce the heat and inflammation, without causing those inconveniences attendant on the use of cold, directly applied. Where these appearances do not exist, but where the pain is accompanied by stiffness, and a loss of temperature, articles of a more stimulating character are proper. The spirituous preparations of capsicum, of camphor, or ammonia, followed by frictions with flannel, or the flesh-brush, are highly serviceable in imparting strength and tone, and the part should then be supported by a roller of soft flannel. If the seat of pain is cold, and covered with clammy perspiration, attended with prickly sensations and weight, it becomes necessary to use articles of a still more bracing and

penetrating kind, as the oleum terebinthinæ; this should be applied with more or less friction, according to the state of inflammation, and the part covered with pads of well carded cotton; in sciatica particularly we have been much pleased with this application. To overcome the stiffness of joints, the tepid bath is highly recommended; it seems best suited to cases occurring in old and enfeebled subjects. Dr. Bardsley speaks very much in favour of the vapour bath system, and recommends that the vapour of hot water be admitted, at first, through a tube of moderate caliber, about half an inch in diameter, and suffered to strike on the part from some distance; by degrees the tube is enlarged, and the space lessened, as the parts are able to endure increased heat. He says, that in those cases where the joints are found rigid, and where the pain, on motion, is exquisitely severe, or where the muscles are drawn and almost paralytic; as is sometimes seen in lumbago, sciatica, &c. this course has particularly pleased him. The bath is to be maintained, as directed by Dr. Bardsley, for not less than a quarter of an hour, and its continuance to be lengthened as the patient can bear it.

The practice of blistering rheumatic seats is very old, and the action of blisters often does much good for a time, but the plan cannot be persisted in long enough for lasting results, and the sores occasioned by them, prevent other and more useful applications. When they are employed, infinitely more benefit is derived from their frequent repetition, than from keeping up the discharge by means of irritants. We, however, prefer rubefacients; and the oleum terebinthinæ, as recommended before, is one of the best. There are some other stimulating liniments very valuable, as the oleaginous, or common liniment of ammonia and oil, and the saponaceous, or soap liniment, with ammonia, camphor, turpentine, &c. When the disease is very indolent and obstinate, much good is derived from applying soap plasters; and these are rendered more stimulating by the addition of gum resins, as ammoniacum, rubbed down with the vegetable acid, or turpentine. Camphor, basilicum, and soap, constitute a formula, which has been in use since the days of Dr. Farrier. As an auxiliary, local and general friction, with flannel or the flesh-brush, should not be omitted; and, as soon as possible, such exercise as can be borne conveniently is to be undertaken. If the patient is not able to walk farther at first, he may move about, with the aid of a cane, in his chamber; and it will not be long before he is enabled to extend his efforts. Exercise on horseback is very serviceable; but, on returning from his ride,

great care should be observed in not suffering perspiration to be checked too suddenly. Much testimony is offered in favour of electricity and galvanism, as remedies in this chronic state, and there is no room to doubt that much benefit has been derived; but to effect what is promised, the fluid should be admitted in much larger streams, and continued for a much longer time, than is usually submitted to. Although we want experience in their use, too much has been said of mechanical irritants to neglect them entirely. Several cases are recorded on good authority, where, after rubefacient and vesicating articles have been employed without effect, irritating the surface by means of nettles, Perkin's points, or needles, &c. has been attended with advantage.

Prophylaxis.—Those habits of life should be encouraged which are best calculated to impart tone, and overcome the enfeebled and morbid action of the system, that renders it liable to the exciting cause. Moderation in diet, with healthful and agreeable exercises, and such employments as serve to preserve the mind unclouded and elastic, with a careful avoidance of all improper exposure, are the means most likely to attain this end. During the intervals exercise should be regular, and so used as to avoid exhaustion. The weakened part is to be bathed in water sufficiently cold to produce an agreeable and bracing sensation, and when the system has become inured, the local and general cold bath should be habitually employed. Sea bathing is attended with the happiest results; though care must be taken after the bath to establish a glow on the skin by diligent friction with flannel; and this, or worsted hosiery, should be worn next to the skin. In using the bath, we are governed by the suceptibility to reaction in the system, for, unless this is perfect, the plan must not be persisted in. Where great debility is found in a part, the local bath should be medicated by adding oak, or other strengthening barks; and, if sea water cannot be obtained, the murias sodæ may be added to that from the spring, in such quantities as to resemble it as nearly as possible. In such cases the intumescence is repressed, and the part supported, by a soft roller of flannel. Removing to a milder climate, when this can be effected, is perhaps one of the best means of prophylaxis.

We have thus given the history and treatment of gout and rheumatism; and it will be seen, from the share which imprudent indulgences and irregularities have in producing them, that virtue and temperance offer the best protection.

"Formam quidem ipsam, Marce fili, et tanquam faciem honesti vides; quæ si oculis cerneretur, mirabiles amores (ut ait Plato) exeitaret sapientiæ." *Tull.*

Diagnosis.—In drawing the line of distinction between gout and rheumatism, very attentive observation is often necessary. Although, in their simple characters, they are readily recognized, each admits of such variety, that their proteiform shapes approach, and, without great care, may easily be confounded. Having drawn the two diseases, it may be proper to point out some of the marks by which they are to be distinguished. The history and general habits of the patient should be understood, together with the predispositions existing in the system, and the exciting causes which have been applied. Rheumatism attacks those who are plethoric and vigorous; gout, those whose constitutions are broken and enfeebled, and in whom plethora is induced on weakness. Females are much more liable to rheumatism, than to gout. As a general rule, rheumatism arises more frequently from an "external and evident" cause, than gout. Its local appearance is preceded by less dyspepsia, and other constitutional symptoms. Rheumatism occupies the larger joints, wandering from one point to another, and frequently affecting several at the same time: gout is situated in the smaller joints, and, except in debilitated and chronic cases, is confined to a single point, and when retrocedent, is more apt to attack some organ important to life. The approach of rheumatism is generally more gradual, and the fever less decidedly remittent. In gout, the pain is more piercing, heavy, and gnawing, attended by spasms and cramps, particularly of the gostrocnemii muscles; the seat of pain is of a more florid colour, and the neighbouring veins distended and turgid. After gout has subsided, a considerable degree of desquamation follows: this is not the case with rheumatism, unless the skin has been injured by stimulating applications.

A SERIES OF ESSAYS

On the Causes, Symptoms, Morbid Anatomy, and Treatment of some of the principal Diseases of the Southern States.

By Samuel A. Cartwright, M. D. of Natchez.

(Continued from page 269.)

ESSAY III.

Art. II. *Pneumonia Biliosa.*

I was called to see Mr. Boerhuss, a young man on a visit to this place from the neighbourhood of Cincinnati, on the fifth day of his disease, pneumonia biliosa. The surface of the body, from the first attack, had been cold to the touch, yet the patient had not complained of being much cold. The first two or three days a difficulty of breathing, and an oppression about the præcordia, were the only symptoms which appeared to distress the patient. After this time, he began to complain of a dull, heavy pain in his chest, extending up to both clavicles and down to the back, accompanied with pain in the head, and great difficulty in breathing. On the fourth day he took a dose of salts, and early on the fifth day another dose. I found the patient with great irritability of stomach and loss of strength, which seemed to have been produced by a watery catharsis. His tongue was dry and black; the surface of the body cold, particularly the extremities; the skin of the hands and fingers shrivelled, as we sometimes see the hands of washer-women; pulse at the wrist small and weak, the temporal arteries full, turgid, and resisting compression; the cheeks flushed, the eyes red and watery, and a purulent matter could be seen adhering to the surface of the cornea and about the tarsi. He had a dry cough; a vomiting of a thin, brown fluid, generally followed the efforts of coughing. The renal secretion was considerably diminished, and his mind appeared wandering, torpid, and forgetful of the place he was in, and the attendants who were around him. Respiration was slow, irregular, and attended with a rattling noise in the throat. Sinapisms were applied to the extremities, also hot applications, as bottles filled with hot water, to increase their temperature. An enema of starch gruel and laudanum, to check the watery

discharges. To remove the irritability of the stomach, to assist the enema in putting a stop to the watery catharsis, and to bring about bilious secretion, calomel was given in large doses: these desirable objects it failed to accomplish. The calomel was then combined with opium; the patient was made to inhale the steam of hot vinegar and water from a suitable apparatus. A large blistering plaster was placed over the stomach and breast: aromatic teas and effervescing mixtures, &c. Under this treatment the vomiting subsided, but the evacuations from the bowels still continued of a watery character. The sinapisms had remained on the extremities twenty-four hours, and had produced no pain, redness, or heat in the parts to which they had been applied. The difficulty of breathing and rattling in the throat increased, the patient had to be propped up in bed, his tongue became drier and blacker, and from all appearances it seemed as if he could survive but a few hours longer. But a few days before, I had attended on two persons similarly affected, and had made use of every means commonly recommended for pneumonia biliosa, but without success. To pursue the same course with Mr. Boerhuss, or any plan of treatment similar to those commonly recommended, I saw plainly would be attended with no more benefit than to do nothing, and let the patient die. The medicines which had been prescribed by two, and sometimes three physicians, in the former cases, although assisted in one case by the vapour bath to warm the surface, had produced no effect, and none in the present case. Rather than see a strong, athletic young man suffocate, on the seventh day of disease I resolved to try the effects of a *strong emetic*, which I hoped, if he could survive the operation, would relieve the lungs of their oppression. A mild emetic did not seem to hold forth sufficient powers to accomplish the great end I had in view. I accordingly gave eight grs. of *tartar emetic, in pills*, at one dose, and directed a variety of stimulants, both internal and external, to support his strength under the operation. It was at nine o'clock A. M. on the 18th January, 1825, that the emetic was given; I returned in three hours, and found that the patient had *not vomited* at all. The only effect which the remedy appeared to have produced, was to create some degree of heat on the surfaces covered by the sinapisms: the watery purging had also ceased. He had now at one dose, ten grains of tartar emetic given him, in pills; and his skin was directed to be well rubbed with a mixture composed of equal parts of ol. succini and aqua ammoniæ. By four o'clock P. M. he had vomited only three times: the

quantity vomited was but small, and consisted mostly of green bile; it was thrown up from the stomach without much effort, and no cramps, or even sickness of the stomach, was produced. He now took another ten-grain dose of tartar emetic, and at eight o'clock ten grains more. The two last doses did not puke him at all. He has now, within eleven hours, taken two scruples of tartar emetic, wanting two grains; has puked but three times, and has not had a single operation from his bowels. The breathing is less difficult, and the rattling in his throat not so hoarse and hard. The renal secretion is increased, and when he attempts to cough, the phlegm in his lungs appears loose, but he cannot spit it up. The wrinkles of the skin covering the extremities are less apparent; pulse 125 in a minute, five beats less than in the morning, and is somewhat fuller and softer; the coldness of the extremities, and of the surface of the body generally, is considerably diminished, but still below the natural temperature. At ten o'clock P. M. his extremities again became very cold, and three teaspoon-fuls of paregoric were given. An hour and a half afterwards, three teaspoon-fuls of paregoric, and seven and a half grains of tartar emetic. At two o'clock on the morning of the 19th, the same quantity of tartar emetic and paregoric was repeated; also, at five o'clock. Visited him at eight o'clock on the morning of the 19th. He passed one small bilious stool during the night, urinated several times, and his extremities have become warmed. Has not puked, or appeared to be sick at his stomach. He now begins to expectorate a thick, tough, bloody phlegm.

The three last doses of tartar emetic were given in sage tea, with the paregoric. I now gave him ten grains tartar emetic in pills, and in two and a half hours ten grains more, dissolved in a small quantity of cold water. Visited him at twelve o'clock, in company with Dr. M'Pheeters: we found him urinating and expectorating freely; he has not puked, or complained of sickness or pain; no operation from the bowels; pulse 120; hands are again inclined to be cold. It was suggested not to continue the tartrate of antimony too long, lest it should exhaust the excitement it had brought out, by producing too copious secretion. He was directed to have mulled cider given him, and eight grains of Dover's powder every two hours. Saw him again at six o'clock P. M. and find that the attendants have mistaken the powders, and given the patient three doses of tartar emetic, each ten grains, instead of the Dover's powder. He appears to have been benefited by the mistake; his extremities are less cold; he has

had no operation from the bowels, and has only puked once, which happened immediately after drinking some cider; complains of no pain; pulse 110; spits up a thick, tough matter; urinates freely; tongue moist; eyes still retain their red, watery appearance; the little clots of purulent matter are still seen on the surface of the tunica conjunctiva, and about the roots of the eye-lashes. Ordered the chain of the spine and the extremities to be well rubbed with the mixture of ol. succini and aq. ammon. and eight grains of Dover's powder to be given every three hours, to act on the skin; also, ten drops of nitric acid every two hours, in sweetened water. The tartar emetic was now entirely discontinued: the patient took, in all, rather more than two drachms in thirty-three hours. I saw him on the morning of the 20th. The first dose of Dover's powder caused the patient to puke a deep green matter; afterwards he had, during the night, four black stools, of tolerable consistency. His skin is now not only *warm*, but *hot* all over; the cutaneous veins are filled with blood; the shrivelled appearance of the extremities has disappeared; he still continues to expectorate and urinate freely, but his tongue has become again dry, and his eyes look more inflamed and blood-shot; he is yet delirious. A free use of diluents, and ten drops of nitric acid in prickly pear tea, every hour and a half through the day.

21st. Very little alteration in the condition of the patient; has had no operation from the bowels since the Dover's powders were discontinued. Direct twenty grs. calomel, with five grs. pulvis antimonalis, every six hours. A short time after the second dose of calomel was given, evacuations of a dark bilious matter took place.

22d. Found him much better, but still very ill. The delirium is gone; the eyes are less red, but have yet on them a purulent matter; the tongue is throwing off the black crust which covered it; the skin is hot, and the pulse would almost bear the lancet. He gains strength under the dark bilious discharges. The same medicine continued.

23d. Appears much better; skin less hot; pulse not so full. The purgative course was now desisted from, for purgatives should not be continued after they have abated febrile heat, &c., for if continued, they will, after a certain time, kindle up a feverish irritation, produce local determinations of blood, and cause the very evil which a judicious use of them is calculated to remove. The seneka tea, and mucilaginous drinks, as prickly pear tea, were given through the day, and a Dover's powder at night. A thick, purulent looking mat-

ter continued to be expectorated, and the urinary secretion continued copious. The bowels were moved once or twice a day, when necessary, by mild laxatives. This course was pursued for four or five days, after which time the skin, which had all along been dry, became moist, and the patient, in a few weeks, perfectly recovered. The tartar emetic used in the above case was genuine; I used the same kind in my practice, and found it to be equally efficacious in producing vomiting, &c. as any I had ever used; I procured it myself from the apothecary, and accurately weighed every dose. After the patient had taken forty-eight grains, lest there might be some fault in the medicine, I went to another apothecary, and procured a quantity made at a different place, and used this instead of the former. The remaining tartar emetic, in each vial, was afterwards used, and found to produce the ordinary effects of the best tartar emetic.

Shortly after this, Dr. M'Pheeters was called in consultation to a patient about the ninth day of his disease, bilious pneumony. The patient was thought to be beyond hope, both by his friends and the attending physician. Ten grains of tartar emetic were given him at one dose; this quantity was found to be more than the patient could well bear, for he turned black in the face, and required a free use of stimulants to enable him to survive its effects; he however became better afterwards. Encouraged by this appearance of amendment, the tartar emetic was not laid aside, but the dose was diminished to five grains every three hours: it was continued in these doses for twelve hours; it produced a favourable change in the system, and the patient recovered. The latter of these patients had been under medical treatment from his first attack; the former not until an advanced period of his disease. The circumstances attending the progress of the two cases were therefore different; and hence, at an advanced stage of the disease, one required ten grains, and the other only half that quantity, for the relief of the same symptoms.

Case 2.—I was called to visit a boy about twelve years of age, in Louisiana, who had had bilious pneumony for seven or eight days. Several doses of calomel, salts, oil, senna, &c. had been given him, which had produced a copious watery purgation. The disease, so far from yielding to this treatment, became aggravated. The pain, restlessness, difficulty of breathing, and debility, daily increased under it. I found the patient delirious, extremely restless, tongue dry and black, eyes red and prominent; respiration slow, irregular, and laborious, attended with a hoarse, dry cough; the extremities

cold; head and breast hot; pulse at the wrist small and compressible, but the pulsation of the carotid and temporal arteries was tense and strong. I had thirty-six grains of tartar emetic made into pills, and three grains of that medicine were directed to be given every three hours, and mustard to be applied to the extremities. The directions run thus: "If the pills vomit or purge, give ten drops of laudanum, in brandy toddy, after each evacuation. If the pulse at the wrist becomes more perceptible under the use of the pills, continue them until the fever about the head abates, but discontinue them if the pulse becomes *less* perceptible. The pills are intended to abate the heat and throbbing about the head, to warm the extremities, to raise the pulse at the wrist, to make the patient cough up the phlegm, or to increase the urinary discharge. When they have produced any one or more of these effects, should they begin to puke or purge, lay them aside, for they will then have done all I expect them to do." The pills had the desired effect—they raised the pulse at the wrist, abated the heat of the head, and removed the delirium. The first doses appeared to make the patient very sick at the stomach, and puked him two or three times, but not oftener. After ʒss. had been taken he began to vomit, as one under the influence of an emetic. The system being now restored to its ordinary state, the tartar emetic was discontinued, and the patient was cured by the ordinary remedies.

Let us imagine the above patient, when the tartar emetic was prescribed, as if now before us. It is evident, from the symptoms enumerated, that the blood is distributed irregularly. That a large proportion of the blood of the whole system is determined to the head, is pointed out by the strong and full pulsation of the carotid and temporal, and the feeble pulsation of the radial arteries, by the heat of the head and breast, and the coldness of the extremities. That there is inflammation of the brain, the pain, delirium, contracted pupil, and red prominent eye, sufficiently prove. That the lungs are enlarged and inflamed, is pointed out by the irregular rising and falling of the chest; by the hoarse, dry cough; by the black tongue, and the pain which attends inspiration. This is a case which is called by the common people "*head pleurisy;*" it is nothing more than pneumonia biliosa, with inflammation of the brain, an effect of the original pulmonary disease. The inflammation of the brain cannot be removed while its cause, congestion and inflammation of the lungs, continues. Nor can an inflammation of the stomach, bowels, or liver, which sometimes takes place in

bilious pneumony as an effect of the pulmonary disease, be removed, while the original cause of each continues, viz. pulmonary inflammation. In the case before us, the patient has been evacuated; but the evacuations are not of that kind which are calculated to relieve the pulmonary affection, but to increase it. The purging, so far from relieving the head, as in phrenitis, increases the delirium, the pain, and the redness of the eyes; for the plain reason, that it increases the cause, the pulmonary affection, on which these phrenitic symptoms depend. Hoadley is one, among the older writers, who has left us many cautions against the custom of "treating the same train of obvious symptoms always in the same manner, without considering to how many different causes they may be owing." Purging, in the present case, increases the encephalic disturbance, by aggravating the pulmonary inflammation: but this is not all; it debilitates the system, and so far drains it of its fluids, that some parts of the system are torpid from paucity of fluids. Examine the skin of the present patient; except about the head and upper parts of the body, the cutaneous veins cannot be discovered: even cording the arm will not cause the veins to rise in the cold shrivelled extremity. Can perspiration be produced while the skin has not a sufficient amount of blood determined to it to support a secretory action? Can the lungs be relieved of their engorgement and inflammation while they are oppressed with too much blood, and the skin torpid from too little? Can the blood be determined to the skin while purgatives are draining the system of its fluids, drawing the fluids from the circumference to the centre, and exhausting those energies which distribute the blood in a direct ratio to the surface, and to every part of the system? Too much blood being determined to a part, it is well known, suspends or perverts a secretory action; but, the fact is generally overlooked, that the same effect will be produced by too little. Purging, which abates the heat of the skin, and produces perspiration, when the system is full of fluids, or when it can remove the congestion or inflammation on which the febrile excitement depends, will have a very different effect after the system has lost a certain amount of fluids, or when it is not calculated to remove the fluids from the parts congested. The tartar emetic, then, in cases like the present, in which too much blood is determined to the head and lungs, and too little to the surface—cases in which there is an inflammation to be subdued, but not enough of fluids left in the system, by the previous evacuations, to enable the lancet, purgatives, &c., to subdue it, yet too great

local determinations to admit of opiates, tonics, or stimulants, —is the best remedy with which I am acquainted to subdue inflammation, with the least expense of fluids, and with the least loss of strength: for in such states of the system, it is of the greatest importance to use with economy the fluids and strength of the patient. Tartar emetic often produces the happiest effects, when it produces no visible evacuation: but we are not to suppose from this, that it is producing no change in the existing morbid actions. In the case before us, we see it lessening the determination of blood to the head, and filling up the collapsed cutaneous veins. When it has thus, in some measure, equalized the circulation, it begins to produce its ordinary effect. We now discontinue it, and cure the patient by the ordinary remedies, which, until now, would have been useless or pernicious.

The two following cases are transcribed from Dr. M'Pheeters' book of cases.

Case 3.—"Mr. Dearbon, a carpenter, aged about thirty years, was taken on the evening of the 15th December, 1825, with a severe chill, pain in the head, side, and limbs, followed by fever. The next day the attendants gave him a portion of rhubarb, which did not operate; then ℈j. of calomel in the evening. Soon a copious watery purging, with some vomiting, commenced; stools thin and frequent, amounting in number to more than twenty. Called to see him at ten o'clock on the morning of the 18th; found him with a weak, frequent pulse; skin dry and stiff; tongue smooth; stools thin, slimy, and very frequent. He is very weak and cannot speak above a whisper, and still complains of pain. Direct twenty grains of calomel, and rather more than two grains of opium, to be given in the form of pills, every four hours, until thick black stools are procured. This medicine checked the watery purging, and in eight hours produced stools of more consistence. He is somewhat stronger, and his pains are easier, but his tongue and skin are both dry, and his pulse is feeble. His stomach is irritable, his countenance is Hippocratic, his hands shrivelled, and he has to be propped up in bed to get his breath. Gave three grains of tartar emetic every three hours, and continued it for twelve hours. The tartar emetic produced no puking, but made the tongue moist. Directed now four grains of the sulphate of quinine every three or four hours. The patient continued very low for two weeks; had still to be propped up in bed. During this time there was great difficulty in restraining frequent thin and acrid stools. For three days during the above

time he lay with one eye constantly closed, and picked at the bedclothes; he had also some delirium, and his stomach continued irritable. The treatment, during this period, consisted principally of a free use of diluents, and sulphate of quinine; occasionally, the nitro-muriatic acid. When the tongue was moist, calomel and opium, a free use of white wine, and occasionally laxative and anodyne enemata. At the end of two weeks his countenance, which had been cadaverous, became more clear and lively, his eyes brighter, and he could at times speak above his breath. A copious bronchial secretion of very thick mucus, with some soreness in the fauces, now took place. Expectoration was encouraged by seneca tea, lac ammoniac, with nitric acid, which was continued for eight or ten days; continuing also the quinine and wine. During this time some bilious secretion took place, and the tongue became uniformly moist. The expectoration stopped, and a slight fever, with great debility, succeeded—gave an emetic of ipecac.—the expectoration returned. By the use of the nitric acid, and a light, nourishing diet, the patient gradually gained a little strength, having to take oil every other day to keep the bowels open. The patient gradually regained his strength and flesh, under the use of a tonic and aperient mixture."

I saw the above patient in consultation with Dr. M'Pheeters, and had but little hope that tartar emetic, or any other remedy, would have been of much service. That powerful article, however, produced a moist state of the tongue, and appeared to awaken the dormant susceptibility of the dry, torpid system, to the impression of other remedies. Certain it is, that the same medicines produced a better effect after, than before the use of the tartar emetic.

Case 4.—"Mr. C. S. a young man of sanguine temperament, who has been the subject of frequent attacks of pneumonia, and believes himself to be inclined to phthisis pulmonalis, was taken on the 29th March, 1826, with a chill, which was followed by fever, and a severe pain in his head and side. Called to him on the evening of the 30th; found him with flushed face, rapid but not tense pulse, tongue furred. He had just lost a pint of blood; feels easier; skin moist. Prescribed a scruple of calomel, with a small quantity of opium, every three hours, until it operates.

31st. Has taken but one dose; spent a bad night; cough dry and troublesome: the calomel has operated only partially. Prescribed the above quantity of calomel, with a small portion of pulvis antimonalis, and pulvis ipecacuanha comp.

every three hours. Saw him in the evening; he has only taken one of the powders; his fever has increased, the tongue dry, cough distressing, skin hot. Gave five grains tartar emetic, with one-fourth gr. opium, every three hours, in pills; and direct him to drink of a tea made of red polyg. senega ℥ij. cinnamon ℥j. potassæ nitras ℥j.; a blistering plaster was also applied to the side.

April 1st. Has taken the above medicine through the night: his fever is lower, expectoration more free, the pain is relieved, and the tongue is moist. Direct the tartar emetic to be continued in five-grain doses, every three hours; to give an injection of starch gruel and laudanum if thin evacuations take place from the bowels, and half a grain of opium if a troublesome vomiting be produced.

2d. Fever still lower tongue moist: has puked occasionally and purged some dark green matter: the tartar emetic is continued, in like doses, every three hours. In the evening, find him expectorating freely; his fever is low. He complains of some weight about the chest. Gave him twenty grains of calomel, and discontinued the tartar emetic, which he has been taking, in five-grain doses, every three hours, since the evening of the 31st.

3d. Has had some copious black stools mixed with scybala; he is better. Direct twenty drops nitro-muriatic acid, every three or four hours. Evening—feels a load about the præcordia. Direct ℥j. of calomel about midnight: it produced more black stools, but he was much exposed to cold during the operation of this medicine, as the floor was wet and damp.

By the morning of the 4th his fever had increased. In the evening his fever was still higher. Took from the arm about eight ounces of blood, which was inflammatory, and gave calomel and James's powder.

5th. Morning – still has some fever; continue the calomel and James's powder. Evening—fever much increased; took away a pint of blood; pulse continues full, but very quick; two hours afterwards half a pint more was taken, and twenty grs. calomel with James's powder given, and ordered to be repeated every three hours. The tepid bath was given twice on the evening of the present day.

6th. Very much relieved. The medicine has operated well; fever has abated; mouth sore. The nitro-muriatic acid and syrup of squills prescribed. The patient soon recovered entirely."

Case 5.—January 17th, 1826, I was called to see Mr. H. and found him propped up in bed, complaining of a violent

pain in his right side, and great difficulty of breathing. He would scream out whenever he attempted to take a full inspiration. He breathed from thirty-five to forty times in a minute, and about every half minute he would want breath so badly, that he would take a fuller inspiration than common, which would throw him into such violent agony that he would grasp firmly whatever he could lay his hands on, and cry out as if a sharp instrument were piercing him. His skin was below the common temperature: his tongue had a slippery look, as if it had just thrown off a crust, yet it was dry to the touch; countenance wild and expressive of pain; pulse 120, weak and compressible.

History.—Mr. H. about thirty years of age, strong and athletic, has been much addicted to the use of ardent spirits; more so of late than usual. Of late he has been several times intoxicated, and exposed to rain and cold. About a week before his attack a diarrhœa commenced; he took some purgative medicine, which relieved the diarrhœa, but he afterwards exposed himself to wet and cold, and the evening preceding his attack he had an epileptic fit. About eleven o'clock on the night of the 16th, he was attacked with a violent pain in his side: a friend took away ℔j. of blood, which eased the pain for a few moments, but it soon returned worse than ever. I saw him at two o'clock in the evening of the next day; I spoke about putting him in the warm bath, but he declared it would kill him to be moved. I stayed with him half an hour, and in that time gave him eight grains of tartar emetic; it did not puke him, but his pain got much easier, and his breathing became better. Directed two grains of tartar emetic and twenty of ipecac. every half hour, until he puked. Called to see him after he had taken three portions, and found that he had neither puked nor complained of being sick. In the mean time, he has had another epileptic fit, but his pulse and breathing are better. While with him he had a copious evacuation from the bowels, like muddy water, and very fetid. Direct four grains sulphate of quinine every hour, and a blistering plaster to be applied to his breast. The person whom I left the directions with got drunk, and the other attendants, not knowing any better, continued the former prescription of two grains of tartar emetic and twenty of ipecac. When I again visited him, I found that he had taken ʒss. of tartar emetic, and ℥ss. of ipecac. since my last visit. Was informed that he had tried to puke two or three times, but only threw up a little phlegm; but he however had three or four fetid stools. After he had taken the above quantity he objected to

taking more, because it made him sick at the stomach; and, to the astonishment of all present, he got out of bed, dressed himself, and went into the next room to the fire; after sitting there for some time he returned to bed, and when I called to see him he was lying *flat* on the bed, and breathing much better, yet he still complained of pain. The quinine was now given, and the blister applied. On the night of the 18th skin hot all over, pulse fuller and stronger, breathing better, pain less. The sulphate of quinine was now given in four-grain doses every two hours, and in the intermediate time a few pills, composed of calomel, aloes, and scammony, were directed to be taken, until they operated on the bowels; laudanum if they operated too much.

19th. Morning—chest rises and falls regularly; skin warm; begins to expectorate a thick, tough phlegm; pain only felt when he coughs; has had but one operation from his bowels: same medicine continued. Evening—has had three black, thick stools through the day. He then fell into a sleep, the first good sleep since his attack, and awoke with a fever on him. His cheeks are now flushed and his tongue is dry; purulent secretion about the tarsi; pulse 100. Ordered the same medicine to be continued.

20th. Medicine not been given; cheeks flushed, tongue still dry, pulse quick and not easy to count; expectoration stopped; no operation from the bowels; sleeps very much. The quinine, the purgative pills, mucilaginous drinks, and seneca tea, are now given regularly.

21st. Has had some operations from the bowels, but they do not afford much relief; tongue still dry; no cough or expectoration; eyes mattery and inflamed; secretion of urine almost entirely suspended. Seneca tea, mucilaginous and diuretic drinks.

22d. No better. Gave two grains of tartar emetic in three teaspoon-fuls of sp. eth. nitrosi every two hours. The intent of the above medicine was to lessen the determination to the head, to re-establish the expectoration, to produce a secretion of urine, and to abate the fever.

23d. Heat and throbbing of the head abated, tongue moist, pulse slow and soft, countenance and eyes look better; expectoration has again taken place, and the kidneys begin to secrete. The medicine did not vomit. Seneca tea and mucilaginous drinks, with some nourishment, prescribed.

24th. Able to walk across the room; pain entirely subsided; expectorates freely; appetite returns.

About a week after this, while convalescent, he again com-

menced drinking ardent spirits, exposed himself to cold, was suddenly attacked, and died in an epileptic fit.

Case 6.—A delicate lady, of sanguine temperament, but nervous, in the twentieth year of her age, and early in the sixth month of pregnancy, was attacked with pneumonia biliosa. The two months preceding the attack, the patient had been dyspeptic; tongue furred; stomach flatulent. For four days preceding the attack, the patient complained of a violent pain in the hip, and also of a chilly sensation, which still continued, notwithstanding the drinking of warm teas, and warm applications to the extremities. Exposure to cold during the operation of a dose of castor oil, had preceded these symptoms. At length, on the third of December, a formal chill took place, which soon gave way to fever, accompanied with a sensation both of heat and cold, and with a severe pain in the side, head, and back. The pain in the side extended from the region occupied by the liver, through the lungs, towards the shoulder, in one direction, and down to the lumbar vertebræ in the other. The pain was compared to the piercing of a sharp sword. The patient lay easier on the right side, but any position was extremely painful. Pulse tense, quick, and frequent, beating from 125 to 130 in a minute; respiration twenty times in a minute, of course no inference, relative to the violence of the disease, could be drawn from counting the number of respirations; but, if the motions of the chest were attentively observed, it would be seen, that after the rising of the chest from inspiration, it would not *regularly* fall in expiration as in health. Inspiration would often take place before the lungs had collapsed to the usual degree from expiration: as expiration was thus cut short, so was inspiration; for the expansion of the chest appeared to increase the pain, and thereby produced one effort towards expiration before the chest was fully dilated. Let us here stop for a moment to inquire into the cause of the irregular movement of the chest, both in inspiration and expiration. When the lungs or pleura is inflamed, the intercostal muscles, says Dr. Walker, always act irregularly if they act at all; but, as the motions of these muscles are always attended with pain, the patient prefers to breathe by the means of the diaphragm. When an attempt is made to take a full inspiration, the intercostal muscles, by expanding the chest, increase the pain, and an involuntary effort towards expiration is immediately produced, which cuts short the inspiration, and produces an irregular action of the intercostal muscles. The diseased state of the thoracic viscera is, therefore, the cause

of the irregular movement of the chest, when an attempt is made to take a full inspiration. Whenever the abdominal viscera are inflamed, it is evident that a full contraction of the diaphragm, by pressing downward and forward the inflamed organs, will be attended with pain. The patient, therefore, cannot breathe by the diaphragm, as when the thoracic viscera only are inflamed. The motions of the diaphragm and intercostal muscles will both be irregular when the abdominal and thoracic viscera are inflamed; and, hence, an irregular movement of the chest and abdominal muscles will take place during expiration and inspiration, because the agents of respiration are rendered irregular in their own movements by a diseased state of the viscera of the abdomen and thorax. In post obit examinations, the diaphragm, says Professor Dudley, is always found *high up* when the abdominal viscera alone are inflamed, but very low down when the inflammation has been confined to the viscera of the thorax. An irregular motion of the intercostal muscles points out thoracic inflammation, and a similar motion of the abdominal muscles and diaphragm is indicative of abdominal disease.

Under the impression that there was inflammation both of the abdominal and thoracic viscera in the case before us, not only from the irregular movements of the agents of respiration, but from the length of time since the patient had first began to complaim of pain in the hip, chilliness, &c. I immediately drew off 1½℔. of blood, which was very buffy. Prescribed arist. serp. and sp. æth. nitr. in free doses, and had bottles filled with hot water applied to the feet, which felt cold to the patient, but were warm to the touch. The bottles were hot enough to have inflamed the skin, and to have produced great pain, had they been applied to the feet of a person in health; yet the patient did not complain in the least of their being too hot. By the above means a perspiration was produced, but the skin, notwithstanding the perspiration, still continued pungently hot, and the pulse became neither softer nor slower. This course was continued through the night. By the morning of the 4th the perspiration had subsided, the pulse had quickened, and the pain, anxiety and restlessness had increased. More than 1½℔. of blood was again taken away; the buffy coat was half an inch thick. The pain was but little relieved, and that only for a short time; for, as soon as the patient recovered from the *faintiness* produced by the blood-letting, the pain returned with equal violence, and the pulse continued after, as before the bleeding, at 135, and the

caliber of the artery appeared to have contracted. Twenty grains of pulvis antimonalis was now given, which produced two or three spells of vomiting: a considerable quantity of phlegm and a little bile was thrown up. Ten grains of calomel, five of antimonial powder, and the same quantity of Dover's powder, were given every two hours through the day. Perspired freely, yet the skin continued pungently hot, notwithstanding which, she complained of chilliness. The pulse diminished in force, but not in frequency. Towards evening, vomited a considerable quantity of phlegm, but no bile; was thought to be better by the attendants, as the skin was moist, and the pain not so severe; but it was evident, from the following symptoms that she was worse, viz. if the patient merely raised up to take a dose of medicine, or uncovered her hand, a disagreeable chilly sensation was produced; the feet were warm, yet she preferred placing them against bottles so hot as would have been extremely painful, had not the organic sensibility undergone a great change from its healthy state: had not slept for three or four nights, and was not inclined to sleep, but kept constantly talking; the tongue was dry and black; got no sleep during the night. About two o'clock on the morning of the 5th, the skin became dry; the pain greatly increased: pulse from 140 to 145, *and not easy to count.* Warm pediluvia, &c. afforded no relief. As the pain was so very great, I concluded to bleed to the relief of the symptoms, but could not persist: before half a pound of blood had been taken the pulse had quickened, and the caliber of the artery had contracted. The pain was but little diminished, and soon returned with its usual violence. The prostration, which, before the operation, was very great, now became greater; so great, that she was unable to raise her hand, or to move herself in any way. She vomited every thing given her; enemata could not be retained. The blood last taken away was more buffy than any of the preceding. External and internal stimulants were tried; the former produced no effect on the torpid skin, and the latter were rejected. A blistering plaster, eight by ten inches, had been applied over the stomach several hours, but was not felt. There was a troublesome tenesmus, without the ability to evacuate any thing. The respiration was short and irregular. It required all the aid which volatile substances applied to the nose, and stimulants, both external and internal could afford, to prevent the patient from immediately dying. At length sight began to fail her, and she could not distinguish the features of those around her. The countenance was Hippocratic, and all who

saw her had not the least idea that she could survive more than a few hours. Her excited mind appeared alone to live, the body seemed already dead. At this critical moment Dr. M'Pheeters, whom I had sent for, arrived; he advised *three grains of tartar emetic*, with five drops of laudanum, *every hour*, in prickly pear tea. The reason assigned for this prescription was, that the existing inflammation could be subdued in *no other way*, without exhausting her strength. Although I had introduced the practice, in this place, of giving large doses of tartar emetic in some forms of bilious pneumony, the present was a case that had all along appeared to me to be by no means adapted to that remedy. As soon as it was proposed by one in whose judgment, prudence and caution I place the greatest confidence, I felt a hope that the patient's life might yet be saved; for I had lost all hope in every other medicine or combination of medicines which the materia medica affords. I hoped that the tartar emetic would here display its stimulating powers; that it would awaken the dormant energies of the system, restore sensibility to the surface, which now neither felt blisters nor the hottest applications; and that it might be the means of subduing the inflammation without exhausting the strength. The first dose, of three grains, the patient did not appear to feel. The second dose vomited twice, and produced great distress of stomach. The third dose I gave but two grains; it produced great sickness and distress, but no vomiting. Mucilaginous drinks were given in conjunction with the tartar emetic. The symptoms are no better, except the *pain*, which is *easier*. The tartar emetic was commenced at eleven o'clock A. M., and at two P. M., after I had given eight grains, Dr. M'Pheeters kindly took charge of the case until two o'clock at night; during which time he gave the patient eighteen grains of tartar emetic, in the form of pills, never giving less than three grains at a dose, with a little opium. The remedy produced little or no vomiting, and the sickness and distress at the stomach, produced by the eight grains in solution, considerably abated by the use of the eighteen grains in pills. The patient was fond of the pills, because she thought they composed her stomach. During the use of the above medicine, her cheeks were flushed at one time and icy cold at another, for two or three times; at length they became permanently flushed. The warm regimen had been pursued previously to the exhibition of the tartar emetic, but during the use of that remedy it became necessary to change it. The greater part of the bedclothes was removed, cold air was admitted freely into the

room, and the patient was constantly fanned and permitted to drink cold water and to eat freely of ice. It was a novel spectacle, to see a patient taking three grains of tartar emetic at a dose every one or two hours, and drinking cold water and eating ice at the same time. Under this course the blister drew and became painful, and the patient began to complain heavily of the hot vinegar with which her extremities and skin were bathed, although she did not feel the same external application when applied much *hotter* previously to the exhibition of the tartar. After twenty-six grains had been given, the pain in the head, back, and breast had nearly subsided, and the pulse had fallen from 145 to 120. The medicine did not operate a single time on the bowels, and she only puked twice while taking the last eighteen grains. The pulse was carefully watched while using the remedies, as it was intended to desist immediately from its use, if the pulse had begun to sink. The pulse, however, gradually gathered strength and diminished in frequency. After the remedy had developed some degree of excitement and awakened up the sensibility of the torpid system, or in other words when the cheeks had become flushed and the skin sensible to external applications, which happened at two o'clock on the morning of the 6th, it was laid aside entirely; because the excitement brought out by tartar emetic, should not be subdued by it, for it quickly exhausts such excitement, if too long continued. Although the remedy had developed in some measure the excitement, yet at the time it was discontinued, the breath of the patient was actually cold. When I held my cheek near her face, her breath produced a similar sensation to a cold, damp air blowing through a broken pane of glass. I know not how to account for this symptom. There was still present an irregular motion of the chest, but less than formerly. Before the breath became warm, a little cough took place, but nothing was expectorated: the cough subsided and a burning heat commenced in the stomach. After the tartar was discontinued the sulphate of quinine was given. —At the first dose eight grains were given. Shortly after this dose of quinine the patient fell into a sleep, for the first time since her attack, (except a little doze a few hours before, while taking the tartrite of antimony.) She slept half an hour, during which time the pulse diminished fifteen beats, but rose to one hundred and ten after she awoke. The sulphate of quinine was continued in four-grain doses every two hours until noon, after which time, a dose of quinine and a purgative powder (composed of twelve grains calomel, eight

of aloes, and eight scammony in a thin wafer made of flour,) were given alternately every two hours. Medicine operated five or six times about night. Evacuations small in quantity, skinny and scybalous. The fever exacerbated about this time and great burning heat and sickness at the stomach were complained of. At first I thought the burning heat and sickness were produced by the sulphate of quinine, but I afterwards found that any thing taken on the stomach would produce the same effect. Sometimes the sickness would last but a few minutes, at others, as long as two hours. It was always accompanied with an oppression in breathing, and the patient had to be propped up in bed. This sickness at the stomach and difficulty of breathing was always worse about the time, or a little before, operations were procured from the bowels. The vitiated secretion of the liver or stomach I think was the principal agent in producing it. The quinine appeared to remove the febrile symptoms, to lessen the frequency of the pulse, and to produce coolness of the skin. The quinine was continued through the night, and a dozen purgative pills were taken.

7th. Much better, has slept pretty well. Free from pain, but extremely sore all over; pulse 100. Quinine, and purgative composed of calomel, aloes, and scammony, continued. Towards evening nose bleeds a few drops, difficulty of breathing and sickness at the stomach return, cheeks flushed; requires constant fanning and rubbing of the extremities to prevent syncope. A small operation from the bowels, of a darkish green colour. Fever and sickness of the stomach continue; pulse 110. At eight o'clock, six grains quinine at a dose; pulse falls five or six beats and the skin becomes cooler; but the oppression, difficulty of breathing, and tendency to syncope continue. Lime water and milk, the supercarbonate of soda, &c. &c., were given with little or no relief. Great antipathy to all medicines, but is persuaded to take through the night three doses of the above mentioned purgative powders by giving her ice to eat afterwards. Medicine operated five or six times, two first evacuations dark green, the others consisted entirely of jelly, which resembled coagulable lymph. These gelatinous evacuations were yellow or white, and did not exceed two gills each. They were attended with so much pain and tenesmus that fears were entertained of a miscarriage.

8th. Looks better, but still has an oppression at the stomach, and cannot lie in a recumbent posture; tenesmus and pains about the loins continue. An enema of laudanum

and starch gruel prescribed. At noon fever rises, cheeks more flushed, pulse rises eight beats, abdomen hard and sore to the touch, but indeed the surface of the whole body is painfully sore. Quinine was given both before and during the exacerbation of the fever, which to-day was not, as heretofore, preceded by a chilly sensation. Still likes to be fanned, but can lie flatter on the bed, and is less distressed at the stomach than yesterday. Magnesia had been given to operate on the bowels, but it seems to have produced griping, and pains extending from ilium to ilium. It was suggested by Dr. M'Pheeters, to give at once some purgative calculated to produce bilious secretion. Magnesia, oil, &c. not being capable of producing bilious secretion, would, he thought, increase the pain and tenesmus, or produce debilitating and watery discharges, but an effectual purgative would, by producing bilious secretion, relieve the tenesmus, abate the fever, and increase the strength. Fourteen grains of calomel, ten of rhubarb, and ten of aloes where accordingly given, a few hours after which a bilious evacuation, more copious than any which had hitherto occurred, took place, the tenesmus subsided, the fever abated, and the patient was enabled to sleep without fanning.

9th. Two green, bilious evacuations about sun rise, slept sweetly, chest rises and falls regularly. When she awoke the saliva was running from her mouth and her breath had a mercurial odour; the black crust now began to fall off from the tongue; gave fifteen grains rhubarb and fifteen aloes, which operated; towards evening the saliva ceases to flow and the fever began to rise. The quinine in four-grain doses, no sickness or burning of the stomach. The weather now became very cold and the patient began to complain of chilliness, accompanied soon by a violent pain in the bowels, with great flatulency of stomach and abdominal tension, soreness, difficulty of breathing and restlessness; passed a sleepless night, spirits of turpentine and opium used occasionally through the night.

10th. Morning, has some slimy evacuations from the bowels accompanied with great pain and tenesmus, anodyne enemata and charcoal in tablespoon-ful doses prescribed; the slimy evacuations now give way to bilious secretion, the griping and tenesmus relieved, and the patient in the course of a few weeks regained her health and strength. I have dwelt the longer on this case, because I thought it necessary to relate every fact connected with a course of treatment that has rescued a valuable life from an untimely death. A faithful narration of every particular connected with such plans of

treatment as have succeeded, in those hopeless states of the system in which all other known remedies have repeatedly failed, may ultimately lead to a safe, certain, and effectual practice in many forms of disease now considered hopeless and incurable. If only a fifth part of the hitherto incurable forms of pneumonia could be rendered curable, more lives would probably be saved than if a specific were discovered for some incurable, yet uncommon disease, as hydrophobia. I hope, therefore, the reader will excuse the tedious detail of the preceding cases, in as much as they inculcate a practice, by which, in my humble opinion, more than one half of those forms of bilious pneumony now incurable by the common methods of treatment, may be rendered curable. The above are only some of those cases in which tartar emetic in large doses has been found to be a valuable therapeutic agent, at a time when no other remedy or plan of treatment, with which I am acquainted, promised to be of the least utility. I would willingly have spared the reader the trouble of reading those cases, by stating what I conceive to be the modus operandi of tartar emetic in the various morbid states of the system. But I am fearful that were an attempt thus made to generalize, without a particular statement of any of the facts, from which the general principles relative to the action of that remedy were formed, that I might inadvertently lead to error, by embracing in the general principle too great a variety of cases; or, on the contrary, exclude some morbid states of the system, in which tartar emetic in full doses is the only remedy the least hope of saving the patient can be placed in. Having now been with me at the bed side of the sick; having observed the effects of this remedy and the states of the system in which these effects were produced, I shall leave the reader to draw his own inferences from the facts presented before him. I would however observe, that as far as my experience with the remedy goes, the most of patients will not bear with convenience and advantage more than five grains at a dose every two hours, and few will bear less than three grains, without producing vomiting and other troublesome symptoms. Some, however, where the system has not been much depleted, as in the first case related, will bear ten grains at a dose. The remedy appears to puke *less*, and develop the excitement *more*, when it is given in the form of pill or dissolved in a very small quantity of water. It is not so apt to puke after the second or third dose. It should be discontinued if the pulse begin to sink under its use. this effect, however, when it does take place, will be found to pro-

ceed from too free a secretion having been produced; small doses are more apt to produce this effect than large doses. If the patient, after having taken a dose of this medicine, feels like vomiting, another dose now given, will generally prevent that effect from being produced. It is thus that the system may be kept under the full impression of tartar emetic in some cases, in which it might otherwise have vomited copiously and thereby have exhausted the strength of the patient. It should also be discontinued after it has brought out the excitement, or after it has rendered the surface, before cold, torpid, and insensible, easily excitable. If after having been used for some time, it should at length begin to vomit, or to purge, it should be discontinued; for these effects of the remedy prove, that the system has returned to its ordinary morbid state, and now only requires the ordinary remedies. It is generally better to combine the tartar with a small quantity of opium: say three grains of the former to one-fourth of a grain of the latter. The states of the system to which it seems best suited are, when the lungs are congested or inflamed, the tongue black and dry, great determination to the head, and a torpid, insensible state of the surface, particularly the extremities; it is also useful in those local inflammations, after blood-letting can no longer be used, where opium is contra-indicated, and in which the ordinary remedies fail to produce either expectoration, salivation, or a secretion of bile or urine. For in such cases, the tartrite of antimony will often be found to be the best of all expectorants: it will also act on the kidneys, and prepare the system to be properly acted on by purgatives. It would be the height of folly to substitute large doses of tartar emetic for the lancet, in those cases which would admit of blood-letting. But there are many states of the system, in pulmonic inflammations, in which the lancet will not relieve the symptoms. The pain, as in the case last related, will not yield to blood-letting, but the pulse will become quicker, and the general strength will be exhausted under its use. Sydenham himself condemns the use of the lancet, notwithstanding there be great inflammation present, as pointed out both by the symptoms and appearance of the blood, if that remedy should fail to give relief, or abate the violence of the symptoms. Dr. Hoadley also observes, that, "If bleeding once, or a second time, affords little or no relief, but if, on the contrary, the pulse falls, and the strength and spirits flag, whilst the pain in the side and the difficulty in breathing continue as violent as ever, or nearly so, we may be certain the fever will not admit of this method.

and an obstinate repetition of bleeding must be dangerous." Such cases of pulmonic inflammation, as are not relieved by blood-letting, are too often not relieved by any of the ordinary remedies which authors recommend. The physician, therefore, has to run the risk of bleeding his patient to death, or to stand still and see the inflammation destroy him. He need no longer be placed in this perplexing situation: for, when the lancet will not ease the pain or abate the violence of the inflammation, and when opium is contra-indicated by the local determinations of blood, and the great visceral derangement, tartar emetic, in large doses, will often relieve the pain, break up the local determinations of blood, subdue the inflammation, and at the same time will not exhaust the strength of the patient. Sometimes, in this climate, pneumonia biliosa is attended, from its first attack, with a watery purging, and an irritable stomach. Tartar emetic, in large doses, has been found to be the best of all remedies, in putting a stop to the deranged organic actions on which the vitiated secretions of such cases depend. If these watery discharges be permitted to continue for any length of time, the skin will become cold and shrivelled, the tongue dry, the pulse will sink, and the patient's strength will be exhausted, and the inflammation, so far from being subdued, will gather strength, and soon prove fatal. While writing this paper, April, 1826, I was called to a case of bilious pneumony of this description. The patient was a stout hearty young man, who, after some previous indisposition, was attacked with a chill; fever soon followed, but the patient could not get rid of a disagreeable chilly feeling. Pain now fixed itself in the side, and extended through the chest to the shoulder, and down to the back, and was greatly aggravated by a troublesome dry cough; the head was also affected. The patient got bled, and took a dose of calomel and jalap. I saw him on the third day. He told me that "the medicine had nearly worked him to death," and that "the pain had greatly increased since he had taken it, and the bleeding had afforded no relief." He puked whenever he took any thing on his stomach; and small watery discharges were frequently taking place from the bowels. There was considerable determination of blood to the head, eyes red, pulsation of the carotids, tense and strong. The whole surface of the body, except the ends of the toes and fingers, was hot, and the pulse at the wrist tense; the patient, however, had warm bricks placed in the bed to remove his chilly feelings. As he was still pretty full of fluids, I bled him nearly to syncope, which afforded not the least relief to

the pain, and the pulse became small and quick. Ordered four grains of tartar emetic, with five or six drops of laudanum every hour, until the pain was relieved. The patient took three doses, which vomited only once, and entirely relieved the pain; the former vomiting and purging was checked, and he fell into a refreshing sleep. He recovered after this, under the ordinary method of treatment.

I now proceed to say a few words on the disease in general. Pneumonia biliosa commences in the Southern States late in the autumn, continues during winter and disappears in the spring. It is either endemic or sporadic. It is most prevalent immediately after the disappearance of bilious or yellow fever. Atmospherical vicissitudes, exposure to inclement weather, irregularity of life, intemperance, &c. would appear to be its exciting causes. The remote or predisposing cause, some past or present distemperature of the atmosphere. The approach of bilious pneumony is generally announced by the occurrence of a pain, more or less acute, in some part or other of the body, as the jaw, teeth, the ear, head, arms, legs, knees, side, or hips. In other cases it commences by a general soreness of the flesh and aching of the limbs, with occasional wandering and darting pains. In some it begins with—but is more often soon attended by a vomiting or purging, or by both —some degree of pain in the side, hence the common name of this disease—bilious pleurisy. Catarrhal symptoms most generally attend its onset. These premonitory symptoms continue from one hour to three or four days, before the disease formally commences, and displays its true character. It sometimes, however, at once commences without having been preceded by any precursory symptoms. In either case, it begins with *a chill* or coldness of shorter or longer duration. When the patient feels very *cold himself* and shivers, we may look with certainty for a hot stage or reaction in one, two, or three hours. When, however, the patient does *not complain* of being *cold* or only slightly so, while the surface of his body, particularly his extremities, are *actually cold to the touch*, we know not when to expect the reacting stage. The cold plague is the popular name in this section of country for cases of the latter description, which, if not so sientific as pneumonia typhoides, is not calculated to lead to error in practice. As the cold plague, bilious and head pleurisies, of the common people, appear to be produced by the same causes, preceded by the same premonitory symptoms, as they occur at the same season, and often attack simultaneously different members of the same family, I have considered them as the same disease,

and embraced them all under the name pneumonia biliosa. We had just come to the common cold stage, wherein the disease assumes different forms and is soon destined to receive different popular names. A natural division here takes place.

1st. *Coldness with a sensation of coldness.*

2d. *Actual coldness with little or no sensation of coldness.*

Let us pursue the first division. The patient complains of being cold and chilly; of pains in his limbs, head, or breast, and of achings of the bones. He breathes hard, has some cough, and occasional sharp, darting pains through his chest. The darting pains continue longer, are more acute, and at length become fixed in some part of the thorax. The cheeks become flushed, the head aches, and the patient about this time, either loses all his chilly sensations entirely—the skin becoming universally hot, and the pulse active—or he still retains some degree of chilly feeling, and at the same time begins to feel an inward heat and burning, which make him restless, anxious, and oppressed. Sometimes the sensation of coldness leaves him entirely for a few minutes, or even an hour or two, and then returns. Often this sensation of coldness is felt when the surface is actually dry and hot throughout, or hot and moist from a perspiration which occasionally breaks out and dries up again. The extremities are sometimes cold, when they are not felt to be so by the patient, and vice versa. The relation between the sensations of heat and cold and the actual heat or coldness does not exist as in health. We have thus followed the first division of the disease, until it has subdivided, into, 1st. *A general sensation of heat unattended by coldness or any degree of chilly feeling.* 2d. *A cotemporaneous sensation of heat and cold, and a lost relation between the sensations of heat and cold, and the actual heat or coldness of the surface.* The former is attended with *general*, the latter with *partial* reaction. In either subdivision the pain becomes fixed generally in the right side, and extends to one or both shoulder blades, or to the clavicles, and down to the back. It is greatly increased by the least effort towards a deep inspiration. The cough also increases it. The cough is dry, or a thin acrid rheum is expectorated, or mucus streaked with blood. The urinary secretion is scanty. Some patients breathe quicker, others slower, than in health. The intercostal muscles act irregularly, and produce an irregular motion of the chest, when a full inspiration is attempted. As it is unnecessary to dwell on the symptoms or treatment of the general reacting cases, the one being so well known and the other so plain, I shall confine myself to that subdivision

of the disease which is attended with a sensation both of heat and cold, and with a partial reaction. If this partial reaction with chilliness, do not emerge into a general excitement with a general sensation of heat, it does not continue long before the local determinations, which take place in it, will produce a morbid state of some other organ besides the lungs or pleura. When a great determination of blood takes place to the brain, that form of the disease is produced vulgarly called *head pleurisy.* Here the symptoms of phrenitis are combined with those of pneumonia. When the determination is to the stomach, bowels, liver, or throat, the disease assumes the form of bilious fever, gastritis, hepatitis, or quinsy, combined with pneumonic inflammation. A physician called in at this time, without a previous history of the case, would be in some danger of mistaking the disease for an idiopathic inflammation of the brain, liver, stomach, &c. For after some other important organ becomes seriously affected, the prominent symptoms of the original pulmonary irritation or inflammation, often become very much obscured, and sometimes little else than an irregular movement of the chest, a cough and an obstruction in breathing, remains to point out the original seat of the disease. When a second organ becomes inflamed, the patient generally loses his former chilly feeling, complains of great heat and thirst—he becomes extremely restless—the tongue dry and black, or dry and polished, or presents a variety of aspects. The pulse is seldom full and strong, but small and compressible, or tense and quick. A general reaction is, however, in some cases, never developed, but the excitement appears to be confined chiefly to the vicinity of the inflamed organs. The disease, thus complicated, and attended by a variety of symptoms, according to the organ secondarily affected, runs its course in from three to twelve days. A remission of the symptoms generally happens in the morning, or in some part of the twenty-four hours—it is favourable when it occurs in the morning. A little before the disease proves fatal, the friends of the patient often flatter themselves that he is about to recover, as the symptoms seem to have become so much better, but the breathing soon becomes more laborious, the motions of the chest more irregular, a rattling in the throat occurs, the extremities become icy cold, and death takes place by the lungs. The disease is, however, so variously modified by remediate agents, constitution, local circumstances, &c. that no two cases are exactly similar. There is very often a strong tendency of the bowels to take on a watery purging, and of the stomach to become extremely

irritable, but in other cases, especially the hepatic cases, there is an obstinate constipation of the bowels. When the disease terminates in health, it is generally by a copious expectoration, attended with the evacuation of dark bilious matter from the bowels, with an increased flow of urine, and a moist state of the skin and mucous surfaces. Sometimes, however, an increased flow of urine, or dark bilious evacuations, with a moisture of the tongue and mucous surfaces, precedes the expectoration; at other times they follow after it, at longer or shorter periods. It is sometimes several days after critical evacuations begin to take place before the skin takes on a secretory action. Perspiration, however, in the milder forms of the disease, is often the first critical evacuation.

Let us now return to the other general division of the disease, "Actual coldness with little or no sensation of coldness." The patient generally has catarrhal symptoms, looks dull and insensible, and is often comatose. There is, as in the former division, a great tendency of the bowels to assume a watery purging, and the strongest cathartics, as well as the milder, are followed by mucous or serous discharges, or of the lotura carnium description. The urinary secretion is suspended or diminished. There is often a hoarse rattling cough, with, or without expectoration—the expectorated matter is generally bloody. The number of respirations in a minute is mostly less than in health. The intervals of time between each expiration and inspiration is scarcely ever the same. Pain in some cases is entirely absent, and when it is present, it is never so severe as in the preceding division of the disease. The extremities are always cold, and, indeed, the whole surface of the body, except about the head and breast, is frequently cold, but the patient, (unless for a little while when first attacked,) rarely *complains of feeling much cold.* The nervous sensibility is often so much impaired that the patient feels neither cold nor pain. The tongue is dry and black in some cases, while in others it differs but little from a healthy appearance. The pulse is small and tense, or small and compressible. Determinations of blood to some important part of the system, as the brain, the stomach, bowels, liver, or throat, generally happen in a very short time after the attack, and inflammations are formed, which, if not removed, prove fatal between the first and twelfth day. The course which this division of the disease pursues is very much influenced, however, by the change which may take place in the pathological state of the system, after the brain, liver, stomach, or any other important organ becomes seriously affected. For

when the brain, liver, or any other important organ becomes inflamed, that pathological condition of the system which consisted in actual coldness, without a sensation of coldness, in torpor and insensibility, sometimes gives way to a very different pathological condition;—viz. general reaction with a general feeling of heat, accompanied with acute pain; more often, however, only a partial reaction, accompanied with a sensation both of heat and cold, and with more or less pain, takes place, whilst in some cases, the insensibility and torpor is so great, that the system is unable to rise from its oppression, the surface continues cold and insensible, the extremities become more shrivelled, the cutaneous veins more empty, the blood more black and dissolved, and is entirely prevented from becoming arterialized by the increasing organic and functional derangements of the lungs. Three different pathological states of the system, therefore, attend the progress of this second division of the disease, viz. reaction either general or partial, or an absence of all external reaction whatever. Each of these pathological states or physiological derangements of the system, it will at once be seen, must influence the progress of the disease, and necessarily produce a great variety in its symptoms, and in the *effects* of the same remediate agents, when indiscriminately used in any of these different physiological derangements.

Pneumonia biliosa assumes such a variety of forms, and has such a numerous retinue of symptoms attending it, that the mind, unless assisted by *mnemonics*, can with difficulty retain all the divisions, subdivisions, forms and symptoms of the disease. They may, however, be readily recollected when associated with different parts of the following flower, which will serve also in place of a recapitulation of the various pathological states of the system that constitute the disease.

b
a
1
2

The roots represent the forming stage of the disease, which is attended by a variety of symptoms, all of which run into a common cold stage—*the stem;* this stem or cold stage divides into two principal divisions; 1st. Coldness with a sensation of coldness; 2d. Actual coldness without a sensation of coldness. The first divides into two other branches or subdivisions; *a.* General reaction with a general sensation of heat. *b.* Partial reaction with a cotemporaneous sensation of heat and cold. The latter subdivision of the disease, it has been stated, does not continue long before it is attended with inflammation of the brain, liver, stomach, or bowels, with general reaction as represented by the full blown flowers, or with partial reaction as represented by the half blown flowers. Inflammation of the brain, with general reaction, may be associated with one of the open flowers, and partial reaction with one of those only half open. So also pulmonic inflammation, with inflammation of the liver, stomach, bowels, or throat, attended with general or partial reaction, may each be associated with one of the open or half open flowers intended to stand for each of these forms of the disease. In the second general division—actual coldness without a sensation of coldness, we found that determinations of blood soon took place to the brain, liver, stomach, bowels, or throat, which were attended with three different pathological states of the system, viz. reaction, either general or partial, or an absence of all reaction whatever. The open flowers may represent one of these pathological states of the system; viz. general reaction; the half open, partial reaction; and the closed flowers an absence of all external reaction. Pulmonary inflammation, with inflammation of the brain, has three different states of the system attending it, each of which may be associated with the full blown, half blown, or closed flowers: so also for the liver, stomach, &c. The little sprigs growing about the roots of the flower may represent those varieties of pulmonary diseases in which no formal cold stage takes place, and which are not to be considered as making a part of that very complex disease denominated pneumonia biliosa, all of whose forms the above flower may easily be made to represent.*

For the second division of pneumonia biliosa, Professor

* Nosologists will no doubt ridicule this humble effort to represent a disease, not as it is found in their books, *cut up* and distributed wherever the *imagination* has been pleased to place it, but as it truly exists, *a complex whole as Nature made it.*

Hosack has adopted Sauvages name, peripneumonia typhoides, which, he says, is "a very appropriate appellation." He considers the disease to consist in an "inflammation of the lungs, and, in some instances, of the brain," "while the general affection of the whole system is that of typhus fever." That there is "a typhoid state of the whole system" in this disease, he infers "from the usual symptoms of a putrescent state of the whole body, the petechiæ, blotches, hemorrhages in the latter stage of the disease, the offensive state of the excretions *in general*, and great prostration of the powers of life which rapidly ensues, and the enfeebled and vitiated state of the whole habit." As to petechiæ and blotches I have never seen them in this disease, and the best papers which I have read on the subject make no mention of them; and as to hemorrhages they are extremely rare, both in pneumonia and in *typhus*. The offensive state of the excretions, prostration of the powers of life, and enfeebled and vitiated state of the whole habit are phenomena, not *peculiar* to typhus fever, but *common* to every disease which proves fatal. Were petechiæ, blotches, and hemorrhages common symptoms of pneumonia biliosa, they would not *liken* that disease to typhus more than to scurvy, yellow fever, &c., and it might, with as much propriety, be called a disease partaking of the form of scurvy or yellow fever, as "*typhoides*" partaking of the form or likeness of typhus. There are few diseases but what have some *common* symptoms of *resemblance*, as "*prostration of the powers of life, enfeebled and vitiated state of the whole habit, and symptoms of a putrescent state of the body,*" at, or a little before, the time they terminate in death. To invent a name for a disease because it has some symptoms like or common to another disease,—symptoms which are also *common* to almost *all* diseases,—is to invent a name which has no useful meaning, and which may lead to error, by holding out an idea that the two diseases resemble each other in more respects than what they actually do. To add to pneumonia the word typhoides, at once conveys the idea that this form of pneumonia *resembles* typhus fever *more* than any other disease; but from Professor Hosack's *own account of these symptoms of resemblance*, we clearly see that his pneumonia typhoides is no more like typhus than like the scurvy, yellow fever, plague, small pox, or any other violent disease whatever; for they are *all* attended with "an offensive state of the excretions, great prostration of the powers of life, symptoms usually called putrescent, and an enfeebled and vitiated state of the whole habit."

The pneumonia biliosa differs from typhus in many important particulars. There is *no subsultus tendinum* or *trembling of the hands* or *tongue* in any stage or form of pneumonia biliosa, that has fallen under my observation; but every body knows how common these symptoms are in typhus fever, even in the congestive typhus of Armstrong. The stomach is irritable, and there is a strong tendency of the bowels to take on a watery purging in the majority of cases of pneumonia biliosa; but the reverse of this is true in congestive typhus: for in that disease, Dr. Armstrong informs us, that the bowels are remarkably *insensible* to cathartics from the *first* attack, and if stools be procured at all, they are small in quantity, not copious and watery as in pneumonia biliosa. The cough, the hoarse rattling respiration, the catarrhal symptoms, the less degree of coma, together with the *pain* that attends on pneumonia biliosa, when reaction takes place, will sufficiently distinguish it from typhus. One of the principal critical discharges in pneumonia biliosa is expectoration, but this is not a critical discharge in typhus. Pneumonia biliosa also terminates in a less time than typhus; but above all, it is *influenced very differently by the same remediate agents.* In fact, the pneumonia biliosa, which has come under my observation, is as free from *typhus fever* as yellow fever from *contagion.*

I now proceed to give a brief outline of the treatment which I have found to be the most successful in the various forms of bilious pneumony. The forming stage first demands attention. The symptoms of that stage evidently seem to depend on pulmonary congestion together with more or less congestion of the portal circle or of some one or more of the abdominal viscera. Warm pediluvia, with a stimulating diaphoretic and a free use of diluents, will, by promoting perspiration, equalize the circulation and remove slight cases of congestion. When the congestion, however, is very considerable, as manifested by the symptoms of the forming stage of the disease, nothing is better than a gentle emetic followed by a dose of calomel and opium. The opium is generally necessary in consequence of the tendency in the system to a watery and debilitating purging. For if any copious purgation take place in this stage of the disease, it will in all probability assume the form of cold plague. All purging, even bilious purging, beyond what is necessary to remove any existing congestion of the abdominal viscera, is injurious. Blood-letting is also a remedy, which may be used with the greatest advantage in the forming stage of the dis-

ease, in persons of full and plethoric habits; because the abstraction of blood, when the system abounds with fluids, facilitates the restoration of a healthy equilibrium; but not so in weakly persons, who have not more fluids than are sufficient to keep up the secretory actions of the various organs. The abstraction of blood from such persons, it is true, removes a part of the load of the congested organ, but then the more distant organs, as the skin, become torpid from paucity of fluids, and their secretory action is consequently suspended. For too small a quantity of fluids in an organ is equally incompatible with healthy secretion as the opposite state of congestion. In the pale faced meagre patient, congestions are much more easily removed without blood-letting, while in those of an opposite description, the practitioner can scarcely ever, in the forming stage of disease, go amiss by bleeding them.

The treatment of the "Cold stage with a sensation of coldness," generally requires nothing more than the application of warm bricks, or bottles filled with hot water, to the extremities, and of a warm diaphoretic and expectorant, as seneka snake root tea, which may be advantageously combined with paregoric, spiritus Mindereri, or some such medicine. Should a general reaction be developed, the lancet should be used and the case treated by the ordinary remedies for such states of the system. But if reaction be slow in developing itself; if it be partial and attended with a chilly feeling, I know of no better plan of treatment than the warm bath and an active emetic. The emetic may be combined with, or followed by, seneka tea, or any other remedy calculated to promote expectoration or a diaphoresis. The emetic will generally evacuate a considerable quantity of phlegm, sometimes bile; will remove the chilly feeling, equalize the circulation, and prevent the formation of local inflammations. For if this irregular excitement be permitted to continue: the irregular determinations of blood which take place in it, will soon kindle up an active inflammation, not only in the part primarily affected, but also in the brain, liver, or some other organ. Inflammation seldom commences at the time when the cold stage begins to yield to reaction: for it is not until after reaction, and especially ataxic or partial reaction, has been permitted to continue for several hours, that inflammation takes place, even in the organ primarily diseased. It is true that there often is violent pain, difficulty of breathing, &c. before this time, but these symptoms appear to depend rather on the *irritation* of the congested organs, than on any *real inflammation*. This I infer from the following circumstances, viz. That

blood-letting will not relieve the pain, as in acute inflammations; while an emetic, by removing the congestions on which the irritation depends, will at once relieve the pain such irritation produces. Blood-letting, however, *will* remove the pain produced by congestion, provided it can remove its *cause:* but this it often fails to do, except when the reaction is general or approaches towards it. But when, as in the present state of the system, there is congestion with but partial reaction, it is too often the *reaction*, and not the *congestion*, which blood-letting removes. A merchant of this place was attacked with pneumonia biliosa shortly after the disappearance of the yellow fever. After a chill of two hours continuance, a partial reaction, attended with chilly sensations, began to develop itself. He complained of great pain and burning in his breast, of difficulty of breathing, and oppression, accompanied with a cough, dry and painful. I bled him and prescribed a purgative. The blood-letting afforded no relief. I visited him three or four hours afterwards and found him delirious, eyes red, cheeks flushed, head hot, and the extremities *more cold* than when I first saw him. He breathed with great difficulty, appeared to be in much pain, shivered when the clothes were removed, and was not satisfied but when wrapped up in several folds of blankets. From the redness of his eyes, the delirium, heat of the head, and throbbing of the temporal arteries, it might have been supposed that the patient had not been bled enough to develop the excitement; but it was plain from his extremities being *colder* than when bled, and from his shivering as when first attacked, that the excitement, so far from having been *brought out*, was turned *inward*, and instead of its having become more *general*, had become more *partial*. I gave the patient an emetic—it took about ten grains of tartar emetic to puke him. The emetic operated but mildly, yet it removed, in a very short time, all the chilly sensations; the delirium went off, the extremities became warm, the pain was relieved, and the redness of the eyes and the flushing of the cheeks disappeared. A cathartic was now given. As soon as three or four evacuations had been produced, a little laudanum combined with a diaphoretic was ordered, in order to determine to the skin. For a purging, whether bilious or not, if permitted to continue beyond certain limits, determines the fluids from the circumference towards the centre, produces a *paresis* of the skin, and actually creates a tendency to those very visceral congestions, which, under proper management, it is so well calculated to remove. The day after this, the patient was able to walk about his room,

and recovered without further trouble. Had the above case been attended with *active inflammation*, it would not have yielded *so soon*, nor could the congestion and irritation have continued much longer without producing an inflammation, which might have been obstinate and dangerous. The above is only one among numerous cases of congestion, coming under my observation, attended with irritation, pain, and partial reaction, in which blood-letting afforded no relief, but which were readily relieved by an emetic. It is a remarkable fact that in cases of the above kind, even when attended with an irritable stomach, that, that organ which rejects nearly every thing else so soon as swallowed, will retain a teaspoon-ful of ipecac. with a grain or two tartar emetic, for half hour or more. I have often found it necessary to repeat this dose, once or twice, before I could get the patient to puke at all. Country practitioners, who generally do not see their patients the first day or two of their disease, i. e. until after inflammation has actually taken place, often are not aware, that the disease in which they now find the lancet so serviceable, could have been more readily and expeditiously cured without the use of that remedy, had they seen the patient during the stage of congestion and irritation, which precedes the inflammation. To know when inflammation has actually taken place, it will be necessary to take into view the length of time which has elapsed since the attack; the *order* in which the symptoms have developed themselves; the appearance of the blood; and the *effects* of medicinal agents. The irritation produced by a mere congestion is not attended with a sizy blood; the pain of irritation is of the irregular and wandering kind, and often parts *far distant* from the seat of the disease, as the arms, knees, hips, &c. are most painful; but in inflammation, the pain is seated generally in the part most diseased, is fixed, and does not become removed without some *evident* cause: whereas, there is no accounting for the appearance or disappearance of the pain proceeding from irritation. It is of great importance to ascertain whether inflammation has actually commenced or not; because the treatment, which would be the most certain and safe before the occurrence of that event, will not always be so afterwards. If it be ascertained, therefore, that this stage of partial reaction be not attended with any local inflammation, but only with congestion and irritation, a Dovers powder may be given after the emetic, or, if the latter has not operated on the bowels, a cathartic to operate a few times, followed by the Dovers powders or some diaphoretic or expectorant. The emetic removes the

pulmonary, and the cathartic the *hepatic* congestion, while the Dovers powder determines to the skin, and prevents their subsequent formation. The partial reaction, chilly sensations, &c. which are produced by the irregular determinations of blood, are at once removed by this treatment, or a general reaction succeeds, which is easily removed by the lancet. Should, however, inflammation have taken place, especially if it be an inflammation of the lungs, pleura, or brain, accompanied with an ataxic or partial reaction, with chilliness and heat at the same time, tartar emetic, in doses of from three to five grains, should be given almost every two hours, until the ataxic fever either be subdued, or until a generally diffused excitement, with universal heat, begins to be developed. In the former case the tartar will relieve the pain; in the latter it will increase it, but will, however, place the system in a situation, in which the lancet *will relieve* it. When an ataxic approaches towards a general reaction blood-letting should be used. If the head be much affected the blood had best be taken from the temporal artery. In the event that the tartar emetic only subdues the partial reaction and diminishes the local determinations of blood, but does not bring about a general reaction, the sulphate of quinine, in doses of four grains every one or two hours, I have lately found to be a valuable remedy in such states of the system. After the quinine has been used through the day a purgative given at night will frequently produce dark bilious evacuations which will remove the hepatic or other abdominal congestions, reduce the inflammations, and strengthen the patient. Whereas, had the cathartic been given before the system had been thus *prepared* for its reception by the tartar emetic and the quinine, it would, in a great majority of such cases as have fallen under my care, have produced a copious watery purgation, an irritable stomach, increased the local determinations of blood, produced a still greater dryness of the skin and the mucous membranes, made the cough more dry and distressing, and added greatly to the debility of the patient. Against the practice of purging in pulmonic inflammations, before the system is prepared for it, antiquity might be awakened. Very high authority might also be adduced against the impropriety of indiscriminate bleeding, or of bleeding at all, in some forms of inflammatory diseases affecting the lungs and their membranes. Speaking of such forms of pulmonary diseases, Dr. Taylor, in his Exercitationes Medicinæ, says: "But in other cases bleeding was either wholly to be refrained, or to be performed only within a few hours of the attack; and though in small

quantity, it proved to be highly dangerous, unless an *emetic* was soon given and followed by the continued use of expectorating medicines. For the disease was of such a nature that, except in *plethoric* persons, the cure was completed by a plentiful expectoration of a viscous phlegm, which proceeded more easily and successfully by not taking away blood than losing it. For bleeding, in persons who are *not plethoric*, generally stopt expectoration, and occasioned a very difficult expectoration with a rattling in the throat." These effects are also produced by the improper use of purgatives, not only in that pathological state of the system which Hippocrates has called κοιλίην ταραχθεισαι "a disturbed indisposition of the abdomen," in which, he says, the evacuations are thin and very profuse, and do great injury in inflammations of the lungs, but also when purgatives have not been preceded by those remedies calculated to place the system in a fit condition for their reception. The remark of Lord Bacon, that "There are many medicines which, by themselves, would do no cure, perhaps hurt: but, being employed in a certain order, one after another, do great cures," will aptly apply to purgatives in pneumonia biliosa. Lord Bacon informs us that from *experiment* he has found the advantages of using remedies in a *certain order*. As an instance of this he states that he has often cured a certain athritic affection by using first a particular poultice, then a fomentation or bath, and lastly a particular plaster. The poultice prepared the part to be acted on by the fomentation, and the fomentation prepared the part to be cured by the plaster. Had Sydenham understood, in the treatment of pleurisy, the *filum medicinale* of Bacon, he need not have postponed purging until the close of the disease, nor need he have feared to have used injections during its progress. For when the system has been duly prepared for their reception, which is what Lord Bacon means by employing medicines in a certain order, purgatives are of the greatest service in pulmonic inflammations, particularly in pneumonia biliosa, provided the purgation be continued no longer than what is absolutely necessary to remove the congestion of the portal circle. Thus, preceded by medicines calculated to prepare the system for their reception, and succeeded by those calculated to suspend any unnecessary or hurtful catharsis, to determine to the surface and to act on other organs, purgatives, so far from checking, will promote expectoration, and enable the various organs to resume their peculiar secretory actions, restore the loss of balance to the system, and equalize the excitement. So soon then as the cough becomes

less hard and painful, the secretion of the kidney more copious, or the skin and mucous membranes less dry, the purgative action should be suspended, and expectorants, diuretics, or diaphoretics, should be used, one or the other, accordingly as nature may seem disposed to relieve herself. The cough becoming more loose and easy, the pulse softer and slower, the pain less severe, the skin and tongue less dry, under purgatives, are symptoms which indicate that the congestion of the portal circle is removed, and as a consequence of *that* removal, other organs are regaining their wonted actions. But if these symptoms of a returning equilibrium of action be neglected, and the purgative course pushed to any great extent with a view to get off *all* the bile, i. e. until the evacuations *cease* to be mixed with bile and change their character entirely, the tongue will become dry, the expectoration will be checked, the pulse will quicken, and the fluids, like bodies deprived of their centrifugal forces, will tend to the centre, and more dangerous congestions will be formed. As some of the most prominent rules of practice in the administration of tartar emetic have already been considered, and the effects which it produces stated, it will be necessary now to mention some of the most evident effects of the sulphate of quinine. In the state of the system, which has been under review, after the partial reaction has been somewhat subdued by tartar emetic, the sulphate of quinine, in four-grain doses every one or two hours, appears to subdue the existing febrile irritation, and to produce perspiration or expectoration. It sometimes, however, brings on a general and equable excitement of the arterial system. In either case it prepares the system to be properly acted on by other agents, particularly purgatives, does away the disposition to watery evacuations, and equalizes the excitement. When it promotes sweat or expectoration, it relieves the pain; when it develops the excitement it places the system in a favourable state for the employment of those remedies, which will relieve the pain, as the lancet, purgatives, or diuretics, &c. After the quinine has been freely used through the day, a purgative, as aloes, scammony and calomel, will, as I before said, be found to produce bilious secretion. In this condition of the system an effectual purgative is preferable to a mild one, as oil, salts, &c.; because the former produces bilious secretion; but the latter, even in a system thus prepared, will seldom be adequate to the production of that effect. If the quinine develop the excitement, the purgative should be given at any time the excitement becomes developed. So soon as the purgative has abated the excite-

ment, and other organs show a disposition to take on a secretory action, the catharsis should be checked by a little opium combined with a diaphoretic, expectorant, or diuretic. By these means a gentle, yet general, secretory action is established, the fluids are elicited from the inflamed organ to those more distant, a part of the excitement is thus translated to distant parts, and the inflamed organ having its quantity of fluids and its degree of excitement lessened, is enabled to bear up under an inflammation that otherwise would have produced an organic lesion or structural derangement.

It is not always necessary in every case of bilious pneumony attended with a partial reaction, to use either tartar emetic or quinine. I was called, on the sixth day of the disease, in consultation to such a case. The patient had been freely bled and stimulating diaphoretics had been given to act on the skin. The pulse was weak and quick, the head but little affected, the pulsation of the carotid and temporal arteries was not strong. The skin and eyes had a jaundiced look, which, with the pain in the shoulder, arm, and right side, pointed out considerable hepatic derangement. The bowels were torpid and had no tendency to take on a watery catharsis. The lungs, however, were primarily affected, as was evident from the history of the case prior to my seeing the patient. But present symptoms pointed out pulmonic inflammation, as the irregular motion of the chest during a full inspiration, the want of uniformity in the length of time between the respirations, and a hoarse loose cough, unaccompanied with expectoration. Large doses of calomel were ordered every two hours, not with a view to remove the congestion of the portal circle *only*, but to promote also a secretory action of other organs than the liver. The calomel, though given freely, purged but moderately, and, by the aid of expectorants, brought on an expectoration which relieved the patient from a condition which was considered, if not hopeless, extremely dangerous, by not less than three physicians. Had there been great determination to the head in the above case, with a redness of the eyes, dry tongue, &c. I am fully persuaded that calomel would have been an useless, if not a pernicious agent. In the treatment of bilious pneumony, the warm regimen should be used so long as the patient complains of chilly sensations, but whenever, in the progress of the disease, he complains of a general sensation of heat, cool air and cold water may be admitted with safety and advantage: but until then the cooling regimen, now so fashionable in the treatment of diseases, is attended with the worst consequences in those affecting the

pulmonary organs. I deem it unnecesary to go into a detail of all the *minor* remedies which may be necessary in the various forms of pneumonia biliosa. The intention of this paper is to bring before the reader some of the principal remedies which myself and those around me have found to be the most successful in the cure, not of the milder, but of the worst forms of this very fatal disease, as it prevails in the Southern States; to show the conditions of the system to which they are adapted, the effects they produce, and the rules to be observed in their employment.

I now proceed to say a few words on the treatment of the second division of the disease, viz. actual coldness with little or no sensation of coldness. After the cases which have been given, it will not be necessary to dwell long on this division. The tartar emetic I have repeatedly found to be the best remedy in removing the congestions, in restoring the sensibility, and in bringing out the excitement in this state of the system. It may appear *paradoxical*, that tartar emetic, a remedy so powerful in subduing excitement, should be one of the most powerful medicines, in certain states of the system, in producing it. Though opposite effects may appear to be produced by this medicinal agent, yet, like the planets which sometimes seem to go backwards it is governed by its peculiar and never-varying laws. It seems to me that tartar emetic produces excitement by restoring energy to the nervous system, thereby enabling it to rise from its oppression and torpor. As a stimulant, in the cold, torpid, and insensible cases of pneumonia biliosa, I never give less than three grains at a dose. I prefer giving it in pills or dissolved in a small quantity of water. Warm applications to the extremities or sinapisms, together with frictions to the surface of some stimulating liquid, are often necessary during the exhibition of the tartar. The longer the system has continued in an oppressed, cold, and insensible state, the more tartar emetic will generally be required to restore its sensibilities. Those who have not lost any very great amount of fluids will bear larger doses of the remedy than such as have been previously much evacuated. The tartar emetic in large doses every two hours sometimes produces no other sensible effect than that of increasing the susceptibilities of the system to the impression of other therapeutic agents. I discontinue its use after it has rendered the system susceptible to the action of other remedies, or after it has brought out the excitement. When the tartar is discontinued, the sulphate of quinine is a valuable remedy in this, as well as in the preceding division of the disease, in preparing

the system to be properly acted on by other remedies. Indeed I have nearly always found purgatives to act much better after the use of tartar emetic, than before it, when no quinine had been given; but still better after both these remedies had been used. When the excitement becomes developed this division of the disease does not require a treatment much different from the preceding division. The excitement brought about by tartar emetic should not, however, be subdued by the same remedy as that which succeeds to the cold stage of the first division. Nor is bloodletting so serviceable in it. The sulphate of quinine should be freely used if the excitement be partial, and purgatives, diaphoretics, &c. if it be general. Calomel and camphor are a good purgative, and calomel, ipecac, and opium, are an excellent combination to determine to the skin after a purgative has operated sufficiently. Expectorants, as the polyg. senega, scilla marit., combined with diaphoretics, diuretics, mucilaginous drinks, or cooling and febrifuge medicines, as the nitrate of potash, together with *blistering*, will all be found serviceable in the treatment of this disease. In the irregular or partial excitement of this division of the disease, the kidnies are more apt to become torpid than when the excitement is general, and it is also more difficult to produce bilious secretion. Instead of teasing the latter of these organs by purgatives, or the former by diuretics, it is far preferable to change the pathological state of the system, which prevents the one or the other of this class of medicines from producing their proper effects. I have recommended the quinine as one of the most efficient agents to accomplish this change, and the tartar emetic to produce a change in that pathological state of the system which consisted in coldness, torpor, and insensibility.

But will not the sulphate of quinine increase the fever, if given during the fever? I answer, that if it does not at once subdue the ataxic fever and produce secretion, or prepare the system for its production, it will increase the fever and make the patient apparently worse; happily, however, it is only in appearance, for the quinine changes the broken excitement or fever into a general fever or reaction, in which the blood is distributed, not in an inverse, but in a direct ratio, to every part of the system; and although, in this last pathological state of the system, the symptoms may appear to be more aggravated to a by-stander, yet the medical philosopher sees, from these very symptoms of violence in the external pathology, that a favourable change has been produced in the internal pathology of the disease, and knows that the system is

now placed in a condition in which the ordinary remedies will produce their ordinary effects. When the general reaction produced by the quinine runs very high, the sp. æth. nit. with tinct. digitalis will be found to moderate the general excitement, to produce diuresis, and to prepare the system for purgatives. To moderate excitement, an increased *urinary* is sometimes even better than an increased *biliary* discharge. Where the latter cannot be readily brought about, the former often can. When once the proper kind of secretion be produced in any one of the great secretory organs, secretion can more readily be produced in others.

It may be supposed a priori that quinine would, notwithstanding, increase the local inflammation and stop expectoration, or prevent that salutary process from taking place. "The bark," says Dr. Heberden, "has been objected to more than any other medicine in cases of considerable inflammation, or where a free expectoration is of importance." "All this," continues Dr. Heberden, "appeared much more plausible, when taught in the school of physic, than probable, when I attended to fact and experience. The unquestionable safety and acknowledged use of the bark, in the worst stage of inflammation, affords a sufficient answer to the first of these objections, and I have several times seen it given *plentifully* in the confluent small-pox without lessening, in any degree, the expectoration."

I have used the quinine in pneumonia biliosa, not only without *lessening* the expectoration, but have evidently thereby *promoted* that important evacuation. To do this, it should be given in doses *sufficient* to subdue the violence of the local excitement, to restore the loss of balance, and to produce secretion; or *sufficient* to produce that pathological state of the system which consists in a general reaction, and thereby to determine to distant parts a portion of those fluids which, during the previous pathological state of the system, being hemmed in about the inflamed organ, had aggravated the inflammation and prevented expectoration from taking place.

Morbid Anatomy.—I have examined the bodies of several persons who have died of bilious pneumony. The lungs were always found diseased. On cutting into them and squeezing them, large quantities of a brown or variously coloured corrupted matter will generally be found to issue out. More than a pint of such matter oozed out of the lungs of one subject whom I examined, yet there was no abscess in either lung, or any particular reservoir of matter, but it seemed to be generally diffused throughout its substance. A greater or less

portion of the lungs was nearly always found *hepatised*, or changed into a substance resembling liver. I have mostly found the left lung more diseased than the right. Drs. M'Pheeters, Gustine, and myself, examined a patient who died of pneumonia biliosa, in whom the left lung was remarkably diseased, part of it being *hepatised*, and the other parts abounding with a brown purulent matter; the right was but little affected. Yet what was remarkable, the disease of this patient resembled somewhat an acute hepatic inflammation. The liver was but little affected. The heart, as is not uncommon in bilious pneumony, contained in it substances which seemed as if formed of coagulable lymph, being from one to three inches long and about half an inch in diameter. These substances differed from those which I have observed in the hearts of yellow fever subjects.

In yellow fever, the substances often found in the heart were of much greater diameter and contained cells, each of which was filled with a yellow serous fluid; but in pneumonia biliosa they were firm and contained no cells. The pleura is generally found inflamed in pneumonia biliosa, and bands of coagulable lymph are often seen extending between the pleura costalis and pulmonalis. The diaphragm is often found inflamed. Professor Dudley says, that by seeing the situation of the diaphragm, he can always tell whether the patient died from thoracic or abdominal inflammation, it being very low down in the former and high up in the latter. There are but few cases in which the mucous coat of the stomach, or some portion of the mucous surface of the intestines, is not inflamed. The liver, in some cases, presents an unusually *red* appearance. The brain is generally diseased. The ventricles often contain a reddish serum. The pia mater and plexus choroides is not unfrequently of a bright scarlet colour. In two cases of pneumonia biliosa, that proved fatal a few weeks after an epidemic yellow fever had ceased to prevail, I discovered considerable inflammation of the membranes investing the *semilunar ganglion* and its *primitive plexuses*. In another case this inflammation was but slightly apparent, but in others it was not perceptible. That yellow fever is radicated in the *ganglions* and *ganglionic nerves*, I have long had no doubt. That the poison of yellow fever is taken into the lungs *by respiration*, that it produces a morbid state of the *ganglial nerves* of those organs, which is transmitted to the ganglions, the centres of the nerves of organic life, and that when the ganglions thus become diseased, *all those organs*, that can bear, with the least impunity, the *suspension* of the

ganglionary *influence*, assume *morbid actions* according to their various predispositions, and the exciting causes applied to each, I hope hereafter to make apparent; but that such is the philosophy of pneumonia biliosa, I am not at present prepared to say, and know not whether I ever will be.

(*To be continued.*)

ART. III. *The Surgical Anatomy of the parts concerned in the operation of tying the Arteria Innominata, illustrated by Transverse Sections.* By HORATIO G. JAMESON, M. D. &c.

(CONTINUED.)

20. In the ninth volume of this Journal, there are some remarks and reflections introductory to a series of Essays on the Surgery applicable to the Neck and Face; according to the arrangement I there proposed, I am now prepared to enter upon the surgical anatomy of the parts under consideration. By reference to my introduction it will be seen in what sense I use the term surgical anatomy. More mature reflection has, however, induced me, in a slight degree, to alter my plan. I have determined to speak of each division of the neck separately, and follow the anatomical description with the surgery and treatment belonging to each.

On the advantages of transverse sections.

21. It may be remembered, by the readers of this Journal, that in vol. 3. p. 325, I have given a section of the pelvis different from the generally adopted method. This was done with a view of deciding whether the account which had been given of a prostate fascia, might be relied on. The success which attended the section of parts, in exposing the fallacy of an opinion, made upon the examination of the parts in a distorted state, led me to believe that we might render our knowledge of parts more accurate, by sections of them in the direction contrary to that in which they had usually been examined. We were advised to separate the ossa pubis an inch and a half violently, and then look among the distorted parts for a prostate fascia. By splitting the sacrum lengthwise, dividing the symphisis pubis, and dividing the muscles connected with the bladder, at their outer ends, I was enabled to give a clear view of all the muscles, ligaments or fascia, in any way connected with the bladder. I am aware that

the method is not altogether new, since in Motherby and other books, drawings somewhat similar are to be seen, but the application is perhaps original. At least five or six years ago Dr. Chiappe made, for the Baltimore hospital, a number of fine preparations in wax; among them several with the thighs amputated, and the ends perfectly finished, so as to show the ends of the muscles, the vessels, and nerves. From that time I have been impressed with the belief, that our knowledge of parts might be made more perfect, by adding to the usual dissection, transverse sections of parts. What success has attended the attempt of Mr. Alcock, of London, in this new field of inquiry, I know not, not having seen any of his drawing; but I feel the strongest conviction that this method of studying surgical anatomy may be pursued to great advantage. Various obstacles have occurred, from time to time, to prevent me from engaging in the investigation of this subject. In addition to the obstacles growing out of professional duties, continually on the increase, there has been much difficulty; nay, as yet, an insurmountable difficulty, in getting an artist. The work is exceedingly simple, but requires tame precision, than which, nothing is more irksome to a good artist. Besides, persons unaccustomed to this kind of drawing have little inclination to enter the dissecting room, and there, from nature, give views so simple as to require patience rather than skill. These obstacles have prevented me from illustrating what I have to say respecting anatomy, by drawings of transverse sections of parts: but I shall at some future period endeavour to supply this deficiency. With my present views of this subject, I have been led to believe, that the mariner would not be less prepared to traverse the seas, trusting to the longitude or latitude alone, than the surgeon is to locate in his mind's eye, with the greatest possible precision, particular parts, by dissecting them in the longitudinal direction only. Whatever may be thought of this matter, by others, to myself it has been a source of improvement; and I hope to prove, to all unprejudiced persons, that much light may yet be thrown upon anatomy; and our perceptions of parts be rendered more precise by studying carefully the parts, and drawings of parts, presented by transverse sections of of them. With these remarks, I proceed to examine the surgical anatomy concerned in the operation for taking up the arteria innominata; and presuming the reader to be acquainted with more general anatomy, I shall confine myself principally to transverse views, and such reflections as may grow out of those views.

Of the External Boundaries for Locating the arteria innominata.

22. Before proceeding to an examination of the precise situation and connexions of the arteria innominata, it seems proper to notice the external boundaries of parts which may bear some relation to the operation for tying that vessel. I have remarked by examining a number of drawings, in books upon anatomy, from Albinus down to the present day, that almost every author begins his drawings with front views of the subject; and with very few exceptions, whether we examine the subject covered with muscles, or merely the skeleton, they are all alike calculated to give wrong impressions, in respect to the upper part of the thorax: many plates in our best works give the idea as though the base of the neck formed a level line, or nearly so, on the chest; and although, this is in some degree corrected by their posterior views, there is many exceptions even here; and the tyro having wrong impressions from always seeing the front views first, is not so likely to observe, with sufficient precision, the considerable angle which the base of the neck forms with a horizontal plane. In short I am convinced that many persons, having good general views of anatomy, have less distinct perceptions of the upper part of the thorax than should obtain. A careful attention to a few transverse sections, of these important parts, will afford more improvement than could easily be imagined.

23. *External Boundaries continued.*—In examining the external boundaries of the parts under consideration, we may observe, that in all persons the sternal bone forms a considerable angle with the spine, so that at the fourth dorsal vertebra there is a sufficient space between the sternum and spine for the lodgement of the heart; but, at the upper end of the sternum, the space between these bones is seldom much more than an inch. The approximation of the upper end of the sternum to the spine is increased, beyond the regular course of the angle pointed out, by the termination of the sternal bone above, in a knobbed form, designed for giving it a firm union with the claviculæ. The upper end of the sternal bone is scolloped out so as to present superiorly a concave surface; and the scollop or curvature is considerably increased by the ends of the claviculæ which are placed principally above the sternum. Mr. John Bell has resembled the upper end of the sternal bone to the figure of a heart on playing cards. By this we are to understand that this bone presents short

branches to the ends of the claviculæ, and I have already said that these branches are knobbed to receive the claviculæ. It is of great importance to bear this in remembrance since we find the right branch of the sternum, with its corresponding clavicle, in most cases, placed over the arteria innominata. We must also bear in mind here, that the sternal portions of the sterno mastoid muscles are given off pretty near the upper side of the bone, and as these are apart the width of the trachea, there is a considerable depression at the superior end of the sternum, the integument falling in here between the sterno mastoid so as to lie on the sterno hyoid muscles. I wish these facts to be carefully remembered since I shall be, in some degree, influenced in my choice of the operation for tying the arteria innominata by them.

24. In the well formed subject, the claviculæ having their attachments to the sternal bone ascend in a slight degree, as they approach the acromion processes. But the first rib coming down from the first vertebra of the back, at a considerable angle, with the line of the spine, is above the clavicle, from about that part of it which is connected with the anterior scalene muscle. At the junction of the rib with the spine it is usually more than an inch above the clavicle on either side of the neck. If we, then, draw three lines across the parts in view—the lower to pass the lowest point of the curvature at the upper end of the sternum—the second to pass the upper edge of the inner end of the clavicle—and the third to pass about an inch higher, on the front of the neck, than the second line:—The lower, or first line imagined, will cross over the roots of the arteries given off at the arch of the aorta, about eight lines above the arch; and will be about an inch above the vena cava descendens: The second line will be about three-fourths of an inch higher, and will cross over that part of the right subclavian artery that is between the arteria innominata and the anterior scalene muscle—on the left side of the neck, the subclavian artery will be found below this line till it emerges from under the first rib: The third line will pass over the junction of the first rib with the spine. These divisions I deem important, as they serve to give us correct ideas of the upper part of the thorax. By attention to these lines we will see, that the lungs extend above the subclavian artery especially on the right side, in some subjects nearly two inches above the lower line which I have pointed out.

General View by Transverse Section at the Root of the Neck.

25. We may now proceed to an examination of the anatomy at the root of the neck by a transverse section of the parts. Having a subject with a well formed neck, we place it on the back, and suffer the head to hang a little over the edge of the table: we now make an incision which commences on the second line, noticed in the preceding paragraph: our incision, which is to begin immediately above the inner ends of the claviculæ, is to be deepened perpendicularly downwards, by gentle strokes of the knife, till we distinguish the right subclavian artery resting upon the rib. We may now turn the knife around the subclavian arteries on both sides, and continue to divide the parts along the edge of the upper rib till we arrive at the transverse process of the first dorsal vertebra. Having so far continued our incisions, in level lines, across the throat, we shall have divided all the important parts; and the cut surface, presented to our view, may be understood by imagining two circular lines—the first of these will lie along the integument, and will present the circular form of the root of the neck. The second circular line will be formed by the body and transverse processes of the first dorsal vertebra; and the space between these will be filled and rounded off by the longus colli muscles. Between these two circular lines will generally be found a space somewhat less than an inch and a half, throughout its greatest extent, but somewhat the widest in its posterior part. It may be remarked here, however, that all the important nerves and vessels at the root of the neck may be included in two straight lines, the one resting on the front of the body of the spinal bone, and the other passing a little in front of the anterior side of the trachea—these lines passing horizontally across the neck, and extending from the outside of the root of one internal jugular vein, to the other, include every thing of importance to the surgeon, at least as respects blood vessels and nerves, and the extent of these lines transversely will seldom exceed four inches.

26. I have already remarked, that the space within the curvature of the first rib is somewhat the widest in its posterior part; to ascertain this, it is only necessary carefully to trace round the bony structure, which will be exposed by the division of parts mentioned in the preceding paragraph, and we shall perceive that the first rib, after it passes from the transverse process of the vertebra, turns a little backwards and laterally, before it turns towards the clavicle; and it will be perceived, that the opening formed by the bones at

the root of the neck will somewhat resemble the shape of a heart on playing cards, the apex of which had been rounded off considerably. The posterior curvature of the rib, on both sides of the spine, will correspond with the lower rounded side of the figure, viewed with its point upwards—the prominence produced by the spine will correspond to the part scolloped out of the base of the figure—and the course of the lateral and anterior part of the rib will correspond with the figure from its widest diameter to its apex, where, it is, however, understood to be rounded off considerably. It seems necessary that we should have clear perceptions of the form of this bony structure, since it is the base of the neck—a firm bony partition between the neck and thorax. It is of importance to understand this structure; because, it affords an enclosure for all the vessels and nerves subservient to the vital and natural functions of the viscera of the trunk; because, it is the point to which are attached all the anterior muscles of the neck; and because, it is a fixed point from which commences the action of the intercostal muscles; and indeed, it is not only the connecting bony structure between the thorax and neck, but it stands as a solid arch upon which, in considerable part, rest the head and neck upon the trunk. I am aware that, in the erect state of the body, the spinal column supports the weight of the head, &c. but it is clear that in the act of stooping there will be considerable pressure upon the cervical base and by this mechanism it is that the viscera are in considerable part protected. Such is its importance that it seems proper to designate it here by some appropriate name, and that of *cervical base* seems to me a suitable epithet for it. The cervical base will be found to make an angel, with the line of the spine, of 20 degrees, and perhaps upwards; so that the posterior part of the thorax is, in many persons, nearly two inches higher than the anterior, and perhaps in all upwards of an inch higher.

Of the Cervical Base.

27. It is not only necessary that we have a clear perception of this structure in the entire; it is also necessary that we have a suitable division of its parts. That part of the cervical base which is formed of the body of the vertebra, I shall name its *projecture;* from the side of the vertebra to the anterior edge of the scalenus medius the *recesses;* from the anterior edge of this muscle to the anterior edge of the scalenus anticus, the *incurvatures;* and from this muscle to the middle of the upper end of the sternum, the *segment.* It is

unnecessary to be particular here till I come to notice these divisions of the cervical base, in locating important parts, within the area of this base. It may not be amiss, however, to remark that the claviculæ form no part of the cervical base.—While the cervical base stands firm upon the thorax, the claviculæ are movable; and of this circumstance the surgeon should never lose sight: a very important practical measure, pointed out by Mr. Harrison, will be noticed when I come to speak of operations on the arteria innominata, and subclavian arteries.

View of the several Nerves and Blood Vessels within the area of the Cervical Base.

28. We are now prepared more fully to explain the parts brought to view by the section noticed, paragraphs 25 and 26, and the reader may consult the 27th paragraph for what has been said of the cervical base. Having a subject placed as stated in paragraph 25, apply the knife to the neck close above the inner end of the claviculæ, divide the integument and platysma myoides; and continue the division in the course of the cervical base, first on one side, and then on the other of the neck two-thirds around; deepen the anterior portion of the incision, through the sternal portions, of the sternal head of the sterno mastoid muscle; we shall then have divided a portion of the external cervical fascia. The inner edge of these muscles will now be found to range with the sides of the trachea, lying below; and we shall have brought to view a mass of fatty and cellular structure of which Mr. Allen Burns says, "by dividing this fascia a mass of fat, equally thick as the upper bone of the sternum, and often having imbedded in its substance, a small conglobate gland, is brought to view:" and, "when these are cleared away another layer of very dense and fibrous fascia is exposed, covering the sterno hyoid and thyroid muscles." We may remark here, that so far we could have done no mischief, unless some anomaly should exist: but we must carefully remember, that sometimes the arteria innominata rises high in the neck; Allen Burns (177 and 417) saw three subjects, in which there was an artery of considerable size passing up the front of the trachea. These peculiarities would be discovered by a careful examination of the hollow at the upper end of the sternum. We may now divide this "mass of fat," and deep seated fascia, in doing which we shall divide some small veins and arteries; but most of these may be avoided in an operation—a diseased gland may occasionally be met with in this

fatty structure, at least we must bear in mind that as there is one or more conglobate glands, in this situation, they may be in a diseased state. The division of the deeper fascia will expose the sterno hyoid muscles, and a little of the inner edge of the sterno thyroid; by dividing these we come into contact with the trachea; but in subjects in which the arteria innominata rises high in the neck, the root of the right carotid will lie under this incision, almost in front, and upon, or a little to the right of the trachea. The same incision which reaches the front of the trachea will reach and partially divide the venæ jugulares, these vessels will be found a little to the scalenal side of the sternal portion of the sterno mastoid muscles. In most cases we shall have divided, by this incision, the cardiac and pneumogastric on the upper, and the recurrent nerves on the lower side of the subclavian artery on the right side. By deepening our incision through the trachea we shall have divided every thing of importance to the operator upon these parts.

View of the important parts within the Cervical Base continued.

29. Before proceeding to the examination of the different blood vessels and nerves, &c. involved in the transverse oblique section of the anterior and lower part of the neck, I shall ask the attention of the reader to a little dissection, upon the parts under consideration. It may not be amiss to premise, with the remark, that by the transverse oblique section I mean transverse, in relation to the perpendicular of the body; and oblique, as relates to the horizontal plane, which may be imagined to pass through the neck at the top of the sternum. In other words, as the upper end of the *projecture* of the cervical base is considerably higher than the middle of the *segment*, paragraph 27, the division of parts, extending from one to the other, must be oblique in relation to the perpendicular of the body; and, to avoid circumlocution, I shall apply the terms *posterior line* for the perpendicular line of the body of the spine; and by these terms I mean a line drawn along the middle of the front of the bodies of the vertebra, from the upper dorsal vertebra to the fourth. Our knowledge of the precise relative situation of parts, which I am now about to examine, will be facilitated by again bringing to view the different parts of the cervical base. 1. From the middle of the upper end of the sternum, to the inner edge of the anterior scalene muscles, the bones are pretty regularly circular, and hence called the *segment* of the cervical

base. 2. The rib having made its turn, and coming now almost directly inwards, where it is connected to the anterior scalene muscle, is therefore called the incurvation; and, 3. the rib soon after leaving this muscle being curved and carried even behind the transverse process of the vertebra, so as to come a little forwards again, to join the process, is therefore called the *recess:* and, 4. the regularly rounded prominence which characterises the spinal bone has led to the adoption of the term *projecture:* 5. and further, as this *projecture* extends from the first vertebra of the back, some distance into the thorax, and as the base of the neck, and consequently the foregoing section of parts, form an angle with the perpendicular line of the spine, I have chosen to call this line the *posterior line* of the cervical base, and upon this is erected the triangle formed at the root of the neck. The *posterior line* and the cervical base give us two sides of a triangle, and the point at the middle of the *segment*, and that immediately behind, on the *posterior line* of the spine, will be the sine of that angle; and, consequently, as the *segment* is more or less near the *posterior line*, so will be the sine of the angle; and from this we may draw a practical inference: for by placing our finger on the spinous process of the first dorsal vertebra, on the living body, and then moving it forwards nearly two-thirds of the distance towards the front of the trachea, we shall have the point at which the first rib is given off, and tracing this line to the end of the sternum, and imagining another perpendicularly downwards (the subject on his back); we shall come very near the length of the sine of the angle; and, moreover, by the same view, we may judge how far the lungs pass up the neck, as they will occupy a considerable portion of the space within this angle, and lie in the *recesses.* Allowance must however be made here for persons of rounded high shoulders, in many of whom the *posterior line* will be in some degree concave forwards, and in some persons of very long necks the contrary will sometimes be seen in a slight degree.

View of Parts within the Cervical Base by Dissection.

30. Upon the same subject upon which we have made the section of the neck along its base, and which has been pointed out in several of the preceding paragraphs of this essay, we may now make the following dissection. Saw the claviculæ opposite the outer edge of the clavicular portion of the sterno mastoid muscles, separate these bones at the connection with the sternum—this will afford a more distinct view of

the cervical base, in its *segment*, than could be had while the claviculæ were in place; and we shall also have a more distinct view of the upper end of the arteria innominata, and even the subclavian will be more completely exposed. We may now saw the rib on either side, at the inner edge of the scalenus anticus; then sawing the sternum, about half an inch below the upper end, we may carefully separate the subclavius muscle, mediastinum, &c. and thus we lift off the *segment* of the cervical base, under which the arteria innominata principally lies, together with the arch of the aorta giving off its branches. If there be a natural order of parts, we see the arteria innominata arising from the arch, a little to the left of the *posterior line*. This artery rising from the part of the arch nearest the sternum, is sufficiently elevated to be laid upon the trachea, which is here a little to the right side of the *posterior line:* now crossing the trachea a little obliquely upwards, it is laid upon the pleura, generally before it terminates in the subclavian and carotid; and the former of these branches usually lies from its origin to the scalene muscle upon the plura, nothing intervening but a few layers of cellular structure. The reader will recollect, that I am now speaking principally of the right side of the neck; and, in continuing our examination, we may observe, that the space between the subclavian artery and bone of the *segment* is narrow, but many of the most important parts are here closely grouped together—we may first notice the nervus vagus, passing within this space, and at right angles with the subclavian artery; and here the recurrent is given off and winds under the subclavian and root of the carotid, and this artery is near the side, sometimes upon the side, of the trachea. In this space along the inner edge of the anterior scalene muscles lies the phrenic nerve—and on the front of the carotid lies the anterior branches of the inferior cervical ganglion. The jugular vein, and also the subclavian, lie in this space. We shall also see that we have cut off the thyroid axis, and cervical arteries, the arteries most regularly given off by the subclavian upwards, within the scalene muscle; and the internal mammary will be seen passing downwards from the edge of the anterior scalene muscle, gets upon the pleura and courses to get along the edge of the sternum. We are also to notice in this space the deep thyroid veins, passing near the carotid artery, and emptying into the left vena innominata. Dr. M'Clellan tells us he has seen these veins greatly enlarged; a circumstance which should not be forgotten. I have thus briefly enumerated the parts lying between the sub-

clavian and the *segment*, of the cervical base. When we consider the proximity of the *segment* and the artery, and consider the vessels, and nerves, within the small space between them ; and that all these vessels, nerves, and glands, have their peculiar membranous sheaths, and these connected to each other ; how can we believe that the division of the sterno hyoid and thyroid muscles, together with the fasciæ, will endanger the action of the lungs, by letting the weight of the atmosphere upon the pleura.

View of the Parts within the Recesses and of the Plura.

31. With this brief notice of the parts between the subclavian artery and the segment, we may now attend to the parts within the *recess*, paragraphs 26, 27, and 29. We may observe, that the trachea under the *segment* lies a little to the right side of the *posterior line*, but upon the *projecture ;* and the arteria innominata being above the trachea, leaves no doubt of the proximity of the root of the carotid to the sterno clavicular union. Then as the subclavian passes from or near the level of the front of the trachea, to pass between the scalenus anticus and medius, we shall see, that there is a considerable space between the subclavian artery and the posterior part of the *recess*. We may here recall to mind again what has been said, paragraph 23, respecting the shape of the posterior part of the cervical base ; and we have only to imagine a line run from the front of the trachea to the scalenus anticus, and applying this line to the figure to which I have compared the cervical base, we will see that much the greater part of the area of the base, on the right side, lies behind the line pointed out ; and in the posterior part of the area or *recess* lies the upper end of the right lung. Having proceeded thus far, we have only to press pretty firmly on the thorax and we shall see the lung pass under the subclavian artery, and occupy the *recess* a considerable distance above the artery. From this view it follows, that when we tie the subclavian artery within the scalene muscle, or the right carotid, at its root, we shall lay our ligature directly over the lung, and nothing intervenes here but some cellular structure between these arteries and the pleura. We see here an additional objection to the opinion that the division of the sterno hyoid and thyroid muscles will endanger the function of the lungs, by the admission of the atmosphere upon them. I am reminded here of what Mr. John Bell says respecting the area within the cervical base, where speaking of the ribs : " the thorax is altogether of a

conical shape, the upper opening so small as just to permit the trachea, œsophagus and great vessels to pass." Than this description nothing could be more incorrect. I have already said that, the *recess* forms a large portion of the area of the cervical base, and that the lung on the right side rises ordinarily into this *recess*, under the subclavian artery: by attention to this circumstance, we will see that as the artery lies upon the pleura, and that the pleura is attached to it, and to the posterior part of the first rib, it will follow, that this membrane lies in its anterior fold behind the great vessels and nerves at the root of the neck. Then as the pleura terminates in the *recess* posteriorly, where attached to the lower edge of the rib, and is also attached to, and descends from the upper edge of the rib, and is reflected downwards anteriorly, to be attached to the subclavian artery and the *segment*, we plainly see how the pleura terminates in a conical pouch-like sac. The pleura is not, however, carried merely from point to point in a stretched manner, on the contrary, this membrane here, and also where it forms the mediastium, is left somewhat loose and floating; so that in violent action of the lungs the right lung may be forced, in a small degree, even above the posterior and highest part of the rib. We have already seen that the angle which the cervical base makes with the horizontal plane of the root of the neck, measured through the upper end of the sternum, will not usually give an angle of much more than about 20 degrees; consequently the pressure upon the pleura and lung here will not be directly downwards, upon the body of the lungs, but, it can only act with any considerable force in the direction of the posterior part of the upper end of the lung, and press it against the longus colli; and even this force will be applied to an inclined plane, whose inclination will in no great degree exceed that of a common wedge; besides the pleura is strengthened here by cellular additions. How readily the lung may play up and down under a pressure thus applied, I think none can be at a loss to perceive. Dr. M'Clellan has given an interesting paper, relating to this part of the neck, which may be found in this Journal, Vol. III, page 332; but if I mistake not, he has here incautiously adopted the opinion of Mr. A. Burns. He says, speaking of the sterno hyoid and thyroid muscles and the cervical fascia; "it is evident that these muscles, besides their influence on the larynx, serve the important purpose of closing the thorax in this peculiarly constructed part, and thus protect both pleuræ from the external pressure of the atmosphere." At paragraph 11, in my introductory remarks,

in this volume, I have noticed some very singular ideas of Mr. A. Burns respecting the uses of those muscles and fascia. Whatever may be thought by others, I am fully satisfied, after the most mature reflection, that Mr. Burns's apprehensions are entirely groundless. To complete my examination of the *recess*, it is only necessary to remark further, that posterior to the subclavian artery we have no parts of importance, except the sympathetic nerves, and the recurrent where it turns round the subclavian artery, to take its course upwards; and here these nerves lie upon the anterior fold of the upper end of the plura, and just above this point the sympathetic nerves are found lying upon the longus colli muscle, and mostly nearly parallel with and under the nervus vagus.

View of Parts closely connected with the Arteria Innominata and anomalies in its branches.

32. In paragraph 30, I have slightly noticed the situation of the arteria innominata. Continuing our examination upon the same subject, it remains to speak of some part sclosely connected with that artery not yet noticed. If we have removed the upper end of the sternum, with due care, we shall have left the vena innominata crossing somewhat obliquely downwards over the arteria innominata, in its course to meet the right vena innominata; and it may not be amiss to observe, that the angle formed by the descending vena innominata with the course of the trachea, will be about equal to that of the arteria innominata upwards, or nearly so; and by this fact we may observe, that the vein and artery cross at a very obtuse angle, and they will be found to intersect one another in the middle of the *segment*, and about half an inch below the middle of the upper end of the sternum. This is the most regular and common order of parts, but as the bifurcation of the aorta is found to vary, and as this vein differs in size, now and then peculiarities will exist which cannot be foreseen, and accidents can only be guarded against in operating on these parts, by a cautious procedure. Imagining the arteria innominata still before us, divested of its covering of bone, cellular structure, and the slight remains of the thymus gland in the adult, we may proceed advantageously to examine a few peculiarities in this artery, and its branches. This part of our subject is not only interesting because anomalies in the vessels might involve a surgeon in unexpected difficulty, and subject the patient to danger, but will afford a weighty circumstance in favour of the particu-

lar operation which I shall recommend. I do not, however, deem it at all necessary to inquire extensively into varieties, as matters of curiosity, but shall merely cite a few authorities, which, while they serve to put a surgeon upon his guard, will also afford a specimen of most of the varieties to be met with. In the Edinburgh System of Anatomy, vol. 3, page 113, it is said: "From the upper part of the arch or curvature, the aorta sends out commonly three, sometimes four large branches, their origins being very near each other"—again, "When there are but three branches, which is oftenest the case, the first is a short trunk, common to the right subclavian and carotid; the second is the subclavian; and the third the left carotid. Sometimes, though very rarely, these four arteries unite in two trunks." The concluding clause of the above quotation is obscure, but I presume he means to say, that the arteria innominata sometimes, though very rarely, gives off three arteries; one case of which I have seen. This was a subject having a very short neck, and the arch of the aorta lower than usual. The left carotid was given off about half an inch from the aorta. This peculiarity might lead an operator into difficulty if he were to proceed incautiously, believing there was no part of importance in his way, on the left of the arteria innominata, till he arrived at the arch of the aorta. It is worth bearing in mind, also, as a pathological fact, since we may infer, that if the disease of the artery was as low down as the innominata itself, we should have so little of the vessel below our ligature, as to lessen the chance of a favourable closure of it; because, such is the force of the blood, and the great size of the root of this artery, that our hopes of success must be slender. A. Burns, 416, mentions his having seen five similar cases, and quotes another from Morgagni, that is, of the right subclavian and both carotids arising in one trunk from the aorta. Where there are four branches from the arch, the most usual is that of the left vertebra going off between the left carotid and subclavian; cases of this have been seen by Innis, Burns, Harrison, &c. It is obvious that this variety would not present any difficulty in tying the innominata. Burns, 177, gives a case in which the right vertebral went off with the carotid, passed under it, and coursing beside the sympathetic nerve entered the third vertebra of the neck. The same author, 109, saw a case in which an artery, rather larger than a crow quill, rose from the very root of the arteria innominata, mounted up along the trachea, between it and the sternal muscles; a little below the thyroid gland, it suddenly turned aside

and placed itself over the œsophagus, &c. Also, 417, relates the case of an infant, in which the arteria innominata, one-eighth of an inch from its bifurcation, sent off an artery of the size of a crow quill, which ascended along the trachea, &c. Page 118, says he saw three similar cases. Dr. M'Clellan, 3d volume of this Journal, page 30, says, "Behind the innominata a small artery runs downwards, almost in contact with its sheath. This is given off from the subclavian near its origin, or from some one of its branches; and goes to the superior part of the pericardium." But he says again, "I have most commonly found it to be sent down from the inferior thyroideal artery." We may also notice the fact here of Dr. Mott having wounded an artery near the innominata, which gave him some trouble: on dissection, this was found to be a branch from the innominata. Haller also notices a small artery in this situation. Paragraph 38, I have quoted three cases reported by Mr. Spackman, and Dr. Godman, of the arteria innominata being wanting. In short, cases enough have been cited to show the necessity of proceeding with caution; and, although nothing serious would arise from wounding the small branches, coursing near the innominata, still it will always be an unpleasant occurrence, and will delay and incommode a surgeon in no small degree. The presence of these arteries occasionally serve to convince us of the advantage of exposing the innominata as fully as practicable. Dr. M'Clellan, in this Journal, vol. 3, informs us, that Dr. Harlan of Philadelphia has a preparation, similar to the one reported by Monro the second. In these cases there is no innominata, and the right subclavian, instead of passing before the trachea, passes between it and the œsophagus and under the trachea. These cases are important, from the circumstance, that a surgeon not aware of such a distribution of the vessels, might be utterly confounded by cutting down and finding no arteria innominata. Burns, 415, has seen "the innominata so high in the neck as the lower border of the thyroid gland." The same author tells us, he saw the thyroid gland attached to the arteria innominata. Another circumstance this in favour of the safety and advantage of exposing the innominata freely—I mean parts exterior to it, not its sheath. Dr. M'Clellan, vol. 3, page 28, says he saw "two of the subjects at the Philadelphia Almshouse, in whom the arteria innominata was fully three inches long, and high in the neck;" also that there was, at the time of writing, a woman at the Almshouse, whose innominata might be distinctly felt giving off the right subclavian two and a

half inches above the clavicle. These cases may be discovered by proper attention before an operation, but are, when present, an additional circumstance in favour of uncovering the innominata.

Of the Converging of the Nerves in passing from the Neck to the Projecture, and of the Subclavian Arteries within the Thorax.

33. In the natural order of the parts, we have no nerves immediately adjacent to the arteria innominata, except the twigs of the posterior cardiac flexus—these filaments are derived from different ganglia of the sympathetic, the recurrent, &c.; they run along the artery somewhat irregularly, and are only to be avoided by carefully opening the sheath of the artery, and then passing an aneurismal needle around as close as possible to the artery. We may, however, remark here, that as the lungs terminate at their upper end in conical points, they must of necessity recede from each other, as they rise near the *recesses*. Now, although the nerves of importance come down the neck in the course of the longus colli muscles, till they come into contact with the pleura, where they are thrown inwards towards the *projecture;* yet, as they pass under the *segment*, they do not come into contact with the arteria innominata. The sympathetic nerves passing on the longus colli muscle, as they wind down along the upper part of the upper end of the conical bag of the pleura, descend somewhat, so as to get along the side of the spinal column posterior to the mediastinum. The pneumogastric nerves, on the contrary, rather ascend, so as to approach in some degree the *posterior line* of the *projecture* and get round about the œsophagus; but as the right passes along the posterior edge of the right vena innominata, it is at a safe distance, say half an inch from the arteria innominata; the left though somewhat anterior to the artery, lies between the artery and vein; and, consequently, more remote from the innominata than the carotid artery. The noni decendens will be found here most generally on the carotid artery on both sides, sometimes within the sheath of the vessels, but as it is chiefly bestowed on the sterno hyoid and thyroid muscles, it is of little consequence except so far as it is associated with some twigs from the cervical nerves, the sympathetic, &c. I have already said that the phrenic nerve passes down upon the anterior edge of the scalenus anticus—this muscle being interposed between the subclavian artery and vein, the nerve naturally takes its

course, from this muscle, between the artery and vein; and continues this course till the subclavian vein unites with the jugular; and these having united to form the right vena innominata, the nerve runs upon this latter vein, into the thorax, passing along the outside of the pericardium. Before closing this part of my subject, it remains to remark, that by looking into the upper end of the thorax, having made a transverse section of it, and having the arteries injected, we shall see the subclavian arteries passing from the sides of the *projecture* to the *incurvatures*, not only upon the pleura, but actually pressing it inwards, like a cord pressed down upon it; sometimes the root of the right subclavian coming off from the innominata low down, will nearly correspond with the origin of the left subclavian from the arch, and connected as they are with the aorta and its arch, rising as they do in a circular or arched form, we have a resemblance in the injected arteries to the Greek letter γ, and the whole of the branches of the letter will be seen lying on the pleuræ, while the stem of it is formed of the aorta.

View of the Parts within the Cervical Base on the left side.

34. Having examined the transverse section of parts at the root of the neck, on the right side, we have now to notice a few peculiarities presented by the division of parts, on the left side of the cervical base. If we have seen highly important parts on the right side, crowded between the subclavian artery and the *segment*, as the lower and upper boundaries; and the root of that artery and the inner edge of the anterior scalene muscle, as the external and internal boundaries, and beheld them with admiration and awe! how much shall we find that admiration and awe increased, when we turn our attention to the left side, where nature, as if intent upon mocking our art, presents us with an astonishing complexity of parts; and has displayed to the eye of the physiologist an assemblage of these, so awfully intricate as irresistibly to call from us the exclamation, "fearfully and wonderfully are we made." Within the small bounds marked out by the acromial side of the left jugular vein, and the right side of the trachea transversely, and between the lower and upper sides of the trachea perpendicularly (the subject on the back), we have grouped together the following highly important parts. 1. The left subclavian artery is given off from the most posterior part of the arch of the aorta, considerably to the left of the *posterior line*, and on the side of the *projecture*.

I think proper to be thus particular, because it goes to show that the left pneumogastric nerve, which passes between the carotid artery and jugular vein, although somewhat projected before them low down to get upon the aorta, is, nevertheless, quite free from any risk in operating upon the arteria innominata. The left subclavian artery having ascended a little, passes outwards under the first rib, till it reaches the *incurvature* of the cervical base. It will follow, then, that as the right subclavian passes above the rib, and the left within it, that the latter must leave less space between itself and the *segment*, than is found on the right side. This inequality is however lessened, in most cases, by the circumstance of the left subclavian and carotid lying something deeper or lower than the arteries on the right side. I am reminded here of a most unaccountable assertion of Mr. E. Bell, in his operative surgery; where, speaking of an attempt at taking up this artery in the living body, he says, "this artery lies full five fingers deep." This assertion is at war with every thing I have said, and it is only necessary for any one who may have any doubts on this subject, to consider that this artery is never lower than the lower side of the trachea, and is never, so far as I have seen, even three fingers breadth from the surface. The difficulty here does not arise at all from the depth of the artery, but from the wonderful assemblage of important parts around this artery. 2. The œsophagus lies somewhat under the trachea, and between it and the left carotid; and this artery is usually more distant from the trachea than the right carotid. 3. The thoracic duct lying in this section immediately under the carotid artery, gives a fearful importance to an operation here; because its structure is such as to conceal it; because its destruction would perhaps always prove fatal, and because its texture is such as renders it exceedingly liable to be injured. 4. We may remark, that in addition to these peculiarities, we have here grouped together all the vessels and nerves situated on the right side of the neck; see paragraphs 32, 33, &c. and we may here briefly enumerate them. The jugular vein, with the addition of the subclavian, forming the vena innominata, and this latter vein occupying a part of the area between the subclavian artery and *segment*. Then we have the same nerves, occupying nearly the same situations as on the right side—the thyroid axis and vertebral artery, differing from the right only in being mostly somewhat deeper. What I have already said will, with sufficient precision, show how the area between the subclavian artery and *segment* is occupied, and goes to in-

volve Mr. Harrison in an error, when he asserts, that "the left subclavian, from its origin to the scalenus muscle, has posterior to it, the vertebræ, the longus colli muscle, and the inferior cervical ganglion of the sympathetic nerve, and ascends along the œsophagus. *Anterior to this artery, are the left lung and pleura, the nervus vagus and left carotid artery, the thoracic duct, left jugular vein and vena innominata,*" &c. I am greatly mistaken if a part of this description be not erroneous. So far as my observation goes, the *recesses* of the cervical base, on both sides of the neck, are the same. Paragraph 26, I have shown, that the *recesses* extend posteriorly somewhat beyond the junction of the rib with the spine. If the artery then were to descend so as to lie on the spine and longus colli, it would have to ascend again to rise over the *incurvature;* and if we admit this, then the assertion that the artery "ascends along the trachea" could not be correct, because the trachea not only runs upon the *projecture*, but upon the *posterior line*, or highest part of the spine; and if the artery keep along the course of the trachea, which indeed is the fact, it cannot be laid upon the bottom of the *recess.* Moreover, my own observations are adverse to this opinion of Mr. Harrison, but I must confess, that since I have adopted my present views of the area of the cervical base, on the left side, I have examined but few subjects: in these I find, that after making the section of the parts transversely, by applying pressure to the left side of the thorax, I can cause the lung to pass up into the *recess*, and, of course, behind the artery; but not in so great a degree as in the right side. "Anterior to this artery are the left lung and pleura." If this description were correct, then the lung, with its covering of pleura, must either pass in between the cervical nerves and the subclavian artery, which would of course elevate these nerves upon the anterior portion of the pleura against the bone of the *segment;* or it must pass in between the *segment* and the nerves, by which they would be placed posterior to the lung. It may be objected to this, that the nerves pass along the tracheal side of the edge of the lung. This is in some degree the case, but not at the apex of the lung, which, most certainly, lies against the middle of the upper side of the area of the *recess*, and consequently behind the artery. I have elsewhere said, that the pleura, as regards its attachment to the bones, terminates at the upper rib; passing down posteriorly from the posterior edge of the rib; and anteriorly, downwards from the anterior edge of the rib: but anteriorly it is ample, loose, and floating, so as to allow the lung to carry

it, in full action of the lungs, even above the upper rib and into the neck. Now, let us recollect that the posterior end of the rib, is mostly, about an inch higher in the neck than the subclavian artery, and we shall see that if the lung does not pass behind the artery into the *recess*, it does not pass into the superior part of the sac of the pleura. If the description of Mr. Harrison were correct in this particular, then, in operating on the left subclavian artery, within the *curvature*, we must either have the cervical nerves more superficial than the arteries, and separated from them, or we must look for them posterior to the lung covered with its capsule of pleura. In a word, the lungs terminate alike in both sides of the cervical base, with this difference only, that the subclavian artery lies deeper in the left side, and, consequently, the area of the *recess* is smaller, and the lung can only have a proportional ascent.

View of the upper part of the Thorax by Transverse Section, &c.

35. I have hinted at the fact, paragraph 33, of the nerves as they descend gathering in at the root of the neck : descending down the neck more widely separated, as they pass through the area of the cervical base they approximate and course upon the *projecture*. Language is almost inadequate to the purpose of conveying the relative changes here of the nerves, what a consoling fact then, that although the nerves, in passing from the neck into the thorax, converge to a considerable degree, yet not in so great a degree as to be in danger of being wounded by a careful operator, in tying the arteria innominata. By suitable drawings only can we expect to convey a clear notion of the situation of the nerves in question : my examination will nevertheless be rendered more complete by giving some account of a transverse section, of the upper part of the thorax, and when my remarks are more fully illustrated, by drawings, I confidently hope my efforts to improve this part of surgical anatomy will prove useful. The first section which I make for the purpose of examining the upper part of the thorax, and especially those parts more immediately connected with the operation of tying the arteria innominata, is effected by sawing off about half an inch of the upper end of the sternal bone ; and then passing in a knife, we divide transversely, all the vessels, &c. lying upon the spine or *projecture*. Then, resuming the saw, we saw through the bones of the spine, and thus, with the knife or saw, make

a clean and neat transverse section, the aspect of which, as the subject lies upon the back, will be that of a perpendicular plane. But before doing this, our labour will be facilitated by separating the arms at the joint of the shoulder, and then dissecting off the scapulæ and adjacent muscles; and also removing the lungs, by cutting the trachea and vessels of the lungs at the roots of the latter. These sections will succeed best on the body in a frozen state; where that cannot be had, the vessels should be injected: for the purpose of injecting, we may cut away the lower part of the sternum and rib, without disturbing the parts we wish to examine. If the above section has been carefully made, we shall cut through the spine about the lower side of the second dorsal vertebra; and that part of the bone which we have left of the sternum, and which constitutes the middle of the *segment* of the *cervical base*, supported as it is by its attachment to the claviculæ, will maintain the bony circle anteriorly, and, thereby, the vessels, nerves, &c. coursing along the *projecture* will be kept *in situ*.

View of the upper part of the Thorax continued—the Pleura more particularly.

36. The first observation which I have to make on the tranverse section of the thorax, relates to the prominence of the spinal column. It will be seen, that as low as the fourth dorsal vertebra, the bodies of the vertebræ rise up about half way, from the most posterior part of the *thoracic sulci*, towards the sternum. And hence we see, that the principal partition necessary for preventing one lobe of the lungs from incommoding the other, is the *projection*, formed by the spinal bones. I have thought proper to notice this fact, although it has no very immediate connection with the operation for tying the arteria innominata. To admit that the mediastinum materially supports the lungs, would be to ascribe a degree of tension to that part of the pleura to which it is not entitled. If we now turn our attention to that part of the subject which lies below our transverse section, by lifting up the end of the aorta which will be found cut off at its arch, we shall see the mediastinum attached to the *projecture* or bodies of the spine, on either side of the *posterior line*, and about three-fourths of an inch apart, and passing up towards the sternum. Within these main folds of the pleura lie the trachea, the œsophagus, the right vena innominata, aorta, the pneumogastric, and the cardiac branches of the sympathetic nerves, and the thoracic

duct. But although the pleura is here rendered thick and strong, by the addition of the cellular membrane, still we find that the vessels which naturally lie upon the *projecture* can be lifted up, fully two inches, before the mediastinum becomes tense. That part of the pleura which forms the mediastinum, on both sides, is loosely reflected round the vessels, and is attached to the sternum, about an inch or something more apart. I have always remarked, that the anterior part of the mediastinum is sufficient in extent to allow its doubling in around the vessels, and between these and the sternum; so that in very full action of the lungs, they may encroach upon the vessels, so as to occupy a part, and in some cases all the anterior and superior chamber of the mediastinum: fortunately, however, in most cases, this approximation of one lung towards the other will be below the root of the arteria innominata; but I have actually seen a subject in which the left lung occupied all the chamber of the mediastinum, and lay as high as the left vena innominata. In this case, I have no hesitation in saying, injury might have been done to the pleura and lung in bareing the arteria innominata. I have represented the mediastinum as being sufficiently extensive, in both its posterior and anterior divisions, to lie loosely about the vessels; by this we see, that if there were disease in the bones of the spine, which would move the *projecture* forwards, the consequence would be, that as the vessels must necessarily rise with the *projecture* towards the sternum, the mediastinum, previously pretty ample, would, by the change of parts, become still more liable to be pressed into the *anterior chamber*, and over the vessels which lie upon the spine.

View of the Mediastinum in particular, with some remarks upon the Pericardium.

37. In my opinion, Dr. M'Clellan has given the best view of the mediastinum, so far as it is concerned in the operation upon the arteria innominata, that I have noticed. I therefore think proper to quote the following from his paper, in this Journal, vol. 3; but believing that he is not altogether correct, in his views throughout, I shall offer a remark or two upon what he has said. Speaking of the chamber of the mediastinum, he says, "The artery (the innominata) is considered as lying within the thorax, and as these sacs are situated on each side, we should particularly inquire into their vicinity. At this part of the thorax the pleuræ are separated from each other at a considerable distance, so as to leave an

irregular space. This space is said to lie between the laminæ of the mediastinum, as they go off from each other to join the first rib, and may be called the upper chamber of the mediastinum. In this cavity is included all the parts which are particularly connected with the innominata. The great curve of the aorta forms its flooring below; the innominata runs obliquely upwards through the centre; the great transverse vein crosses in front between this artery and the sternum; the trachea and œsophagus lie behind; the descending cava on the right; and the left carotid and subclavian arteries and veins on the left. No portion of either pleura therefore lies in front of this artery; and they are both separated from it on each side, so widely by the intervening organs, that no direct operation can implicate either. But posteriorly the right pleura is not so distant from the artery under consideration. An extension of this sac seems invariably to have been pushed up behind the right subclavian vein and innominata as high as the upper edge of the upper dorsal vertebra. If you dissect but a very little behind the artery, you will come in contact with this right sinus of the pleura." Upon these observations the doctor has made this note: "As I shall mention hereafter; the common idea of the extent of the pleuræ is incorrect. They do not terminate at the first ribs, as is stated by all the books, but extend a considerable distance above them, and line the inner surface of the scaleni muscles. In several subjects I examined in presence of the most respectable witnesses, the pleuræ extended up on each side as high as the thyroid cartilage. From this circumstance, I can account for the extraordinary cases of emphysema recorded by Burns as occurring from abscesses in the neck." I have no desire here of objecting to what is said with respect to the pleuræ being occasionally found so high in the neck, on the contrary, it accords with my own observation; but our author is in error when he charges all the books with giving erroneous views, when it is said that the pleuræ terminate at the first ribs. It is an undeniable fact, that the pleuræ have no fixed connection above the first rib, and most of that part of this membrane which we find in the neck, is that portion of it which comes down from the rib to the subclavian artery, and any portion of the pleura which is seen above the posterior end of the rib or highest point of the *recess*, is merely so much of the membrane, as is left floating between the rib and subclavian artery; and is only above the head of the rib when the lungs are fully distended, either by mechanical pressure or air. The fact of the left pleura also

extending up the thyroid cartilage is an important one, in support of what I have said, respecting the lung on both sides passing behind the subclavian artery, whereas Mr. Harrison says, on the left side, the lung and pleura are anterior to the subclavian artery. We shall never have correct views of the upper sacs of the pleuræ, unless we carefully bear in mind, that the *cervical base* forms an inclined plane, and that the posterior part of that plane is seldom less than two inches, (and often more,) higher than the anterior part; so that it is by looking into the thorax anteriorly that we are very apt to forget that this cavity extends highest in its posterior part.—We are told, that the "cava descendens lies on the right." I have to object to this assertion—the cava descendens does not rise above the aortic arch; by closer attention, we find the doctor is speaking of the right vena innominata, which lies on the right side of the mediastinum, but at a safe distance from the arteria innominata. It will be observed, by the readers of Mr. John Bell's Anatomy, that he has not only given an erroneous view in all his drawings, but also in his description: he constantly speaks of the vena cava extending up to the union of the jugular and subclavian veins. Mr. Harrison has very properly termed this portion of vein the right vena innominata. This is a matter of some importance, since, in looking at Mr. Bell's plates, one would be led to apprehend considerable risk of wounding this vein, in tying the arteria innominata. We may observe, however, that the vena cava commencing below the arch can be in no danger; nor is the right vena innominata, which at its upper end lies outside of the sternum, in danger; it leans towards the aorta, so as to unite with the left vena innominata where the cava descendens commences, but at its upper end it is far separated from the *posterior line*. And we may remark here, that the pericardium is thrown over the upper end of the cava, but does not embrace the vena innominata. Moreover, there is not only a strong membrane between the arteria innominata and the vein, but also a membrane on either side of the trachea, besides the sheaths of the vessels; so that we have several layers of membrane interposed between the artery and vein. Still, where the arteria innominata is given off low down, at its outer end, it may lie pretty close to the vena innominata.

View of Pericardium: Artery branching within it: Cheselden doubts of anomalous vessels.

38. In the preceding paragraph it is stated, that the arch of the aorta forms the flooring of the superior anterior chamber of the mediastinum. This assertion leads to the inquiry as to other parts connected with this flooring. Suppose we have extravasated blood, &c. lodged in this chamber, in an operation, how will it lie in relation to the pericardium? The fact is, that such is the provision made by the various membranous structures, and so completely is the division, which lies between the mediastinal pleuræ filled up, that infiltration of blood is not likely to take place. But, especially, we may assume as a fact, that our operation cannot involve the safety of the pericardium. Mr. John Bell tells us, that all that part of the aorta which lies below the arch is within the pericardium, that this membrane surrounds the aorta and vessels like a ring, all which is correct. So that we have only to examine the aorta uncovered, and we shall see that the upper fold of the pericardium has the appearance of the finger of a large glove, the end of which has been cut off, and the artery is seen passing up through it. To the artery the membrane is closely attached, and it soon distends, so as to pass round the heart, &c. There is then no possibility of any extravasated fluid entering the pericardium. If a fluid were possibly to descend lower in the thorax, it must be exterior to the pericardium. I have been the more particular here, from the fact, that Mr. Spackman has reported a peculiar lusus of the arteries of the arch. In the Philadelphia Journal of the Medical and Physical Sciences, vol. 12, page 29, we are told that a subject was examined, in which "the arteria innominata was wanting, and the subclavian artery on the right side arose from the aorta about an inch below its curve, and passed behind the œsophagus." At page 202, Dr. Godman says, this "was the third instance in which very similar irregularities of distribution of the vessels of the aorta had occurred" at his dissecting rooms. It is to be regretted, that these gentlemen were not more particular. Now that surgeons think of operating on the arteria innominata, every peculiarity in the distribution of the branches becomes highly important. A fact of the very greatest moment is presented in seeing the right subclavian coming off an inch below the arch, since we have just seen, that the pericardium commences immediately below the arch, so that in Mr. Spackman's case the subclavian arose within the peri-

cardium. Had a surgeon engaged in pursuing this artery, he might have been led into danger: before he could have arrived at the root of the subclavian he would actually have laid open the pericardium. It is greatly to be desired, that Mr. Spackman had informed us of the situation of the right carotid, —— Dr. Godman has left his two cases still more unsatisfactory. It is a singular fact, but highly satisfactory, that the celebrated Mr. Cheselden expressly says, he never saw any of those varieties in the vessels of the arch, pointed out by others. And it was not an unfair conclusion, after dissecting as long as he must have done, without finding any varieties, for him to conclude, that reporters must have taken their description from "brutes." This is consoling, because it goes to show, that if we now and then meet peculiarities in the arteries under consideration, amid the vast mass of subjects dissected in more modern times, still aberrations are few indeed.

Surgery connected with the Arteria Innominata; apprehensions of danger to the Brain examined, &c.

39. In entering upon the surgery connected with the arteria innominata, I am reminded of the fact, that to Mr. A. Burns is due the high honour of first suggesting the idea of tying this artery in the living body; and Dr. Mott pays Mr. Burns a just compliment, when he says, "Since the publication of Mr. A. Burns's invaluable work on the surgical anatomy of the head and neck, I have been in the habit of showing in my surgical lectures the practicability of securing in a ligature the arteria innominata: and I have had no hesitation in remarking as my opinion, that this artery might be taken up for some conditions of aneurism, and that a surgeon with a steady hand and correct knowledge of the parts, would be justified in doing it. I felt myself warranted in this from the singular success which this celebrated anatomist informs us attended his injections, and from my own investigation of this subject." Dr. Mott in his remarks does ample justice to the memory of Mr. Burns. To show the relation in which these two gentlemen stand, in respect to the merits of the operation on the arteria innominata, it is necessary to cite a few of the observations of Mr. Burns. Speaking of a case of aneurism at the root of the neck, a case involved in some doubt, and in which some of the surgeons present had thoughts of operating, although it would require the taking up the subclavian within the *incurvature*, or per-

haps the innominata, Mr. Burns says, page 61, "The objection which we had to the experiment, was the uncertainty with respect to the state of the coats of the arteria innominata; we entertained no dread of the circulation being supported in the right arm, nay, we reduced it to a demonstration. On the dead subject, I tied the arteria innominata with two ligatures, and cut across the vessel in the space between them, without hurting any of the surrounding vessels. Afterwards even coarse injection impelled into the aorta, passed freely into the arteries of the right arm, filling them and all the vessels of the head completely." At page 73, Mr. Burns remarks further: "As to the practicability of passing a ligature round that artery, we had no hesitation, and experiments made on the dead subject convinced us, that we had nothing to dread in regard to the arm being supplied with blood; but there was still another consideration which we were entirely without the means of solving. We had no proof of the effects which would be produced on the brain by suddenly cutting off the supply from two of its vessels." That Mr. Burns had serious thoughts of tying the arteria innominata, we may infer from what he says, page 73, "and I have to add, that in subclavian aneurism an operation ought never to be advised, unless where the fingers can be insinuated between the tumour and the chest, *and even then the arteria innominata should be tied*, without any very sanguine expectations of success. There are many causes which tend to lessen the probability of this operation having the desired effect. In aneurism about the extremities, we can completely, or nearly completely, interrupt the flow of blood through the sac. But in aneurism at the commencement of the subclavian artery, tying the arteria innominata has no such control over the circulation. By passing a thread round that vessel, we may, indeed, very materially lessen the quantity of blood sent into the sac; but while the common carotid and vertebræ remain unsecured, the retrograde circulation through the tumour must be considerable." The objections which Mr. Burns makes to this operation are such, that a high share of honour is due Dr. Mott as the first surgeon who ventured to perform the operation of tying the arteria innominata. Mr. Burns's fears of *injury to the brain*, of the retrograde course of the blood, and the rule which he lays down, that we should not operate unless we could insinuate the fingers *between the tumour and the chest*, were in a high degree calculated to awaken a large share of apprehension upon the mind of Dr. Mott. I have been the more particular in

my quotation here, with a view of calling the attention of the reader to the apprehensions of Mr. Burns, that the retrograde circulation would be likely in a great degree to lessen our chance of success. The operation of Dr. Mott has tended, together with that of Professor Graefe since, in a good degree to remove such apprehension. In Dr. Graefe's case, the pulsation immediately ceased. Dr. Mott tells us, that "immediately after the ligature was drawn tight, the tumour was reduced in size about one-third, and the course of the clavicle could be felt." This operation proves, then, that the circulation may be maintained in the right arm after tying the arteria innominata, which Mr. Burns did not doubt—it proves, that the brain is in no danger—that the retrograde circulation is not a serious objection—that we may operate even where the "fingers cannot be insinuated between the tumour and the chest," since Dr. Mott expressly states, that it was after a considerable subsidence of the tumour that he was enabled to feel distinctly the course of the clavicle, all which were matters of doubt with Mr. Burns. This operation, and that of Professor Graefe, both go to strengthen the hope, which we might a priori indulge, that this artery would heal when tied in a sound state. I shall therefore conclude this paragraph by the remarks, that to Mr. Burns we are indebted for the idea of tying the arteria innominata, but it was the still higher merit of our countryman, Dr. Mott, to reduce to experiment the matter of fact, and draw the fair conclusion, that we should not shrink from the task of performing this operation. How it may be best performed is, perhaps, open for further examination, and to this point I shall now turn my attention.

The Operation of Dr. Mott examined.

40. Dr. Mott being the first surgeon who operated on the arteria innominata, it seems proper that I should first notice his method. He says, "I commenced by incision upon the tumour, just above the clavicle, and carried it close to this bone and the upper end of the sternum, and terminated it immediately over the trachea, making it in extent about three inches. Another incision about the same length, extended from the termination of the first along the inner edge of the sterno cleido mastoid muscle. The integuments were then dissected from the platysma myoides, beginning at the lower angle of the incisions, and turned over upon the tumour and side of the neck." I would remark here, that, in general,

we could not distinguish clearly the platysma; nor can there be any advantage in designedly dissecting the integument from it; no harm can arise from carrying the knife at once to the external fascia. This appears to be a proper place for noticing a singular inadvertence which has crept into Dr. M'Clellan's account of Dr. Mott's operation. He says, incisions were made "through the integuments and muscles of the neck, in *three different directions*. The first was drawn parallel with the clavicle, and across the fibres of the sterno mastoid muscle, the second from the termination of the first obliquely upwards to the trachea; and the third from the termination of the former upwards in the direction of the inner edge of the sterno mastoid." It is only necessary to attend to what I have just given from Dr. Mott's own account, in order to see that a degree of confusion has somehow crept in here, and it is certainly desirable to remove all ambiguity in a matter of so much importance. The integument having been turned over the tumour and side of the neck, Dr. Mott continued the operation, by "cutting through the platysma myoides, and cautiously divided the sternal part of the mastoid muscle, in the direction of the first incision (along the clavicle), and as much of the clavicular portion as the size of the swelling would permit, and reflected it over upon the tumour. The internal jugular vein was encroached on by the swelling, which made this part of the operation of the utmost delicacy, from the morbid adhesion of that part of the clavicular portion of the muscle to it, which was detached. I separated this portion of the muscle to as great an extent, however, as the case would possibly allow, to make room for the subsequent steps of the operation; only a part of the vein was exposed. The sterno hyoid muscle was next divided, and then the sterno thyroid, and turned upon the opposite side of the wound upon the trachea. This exposed the sheath containing the carotid artery, parvagum, and internal jugular vein. A little above the sternum I exposed the carotid artery, and separated the parvagum from it; then drawing the nerve and vein to the outside, and the artery towards the trachea, I readily laid bare the subclavian about half an inch from its origin. In doing this, the handle of a scalpel was principally used, nothing more being required but to separate the cellular membrane, as it covers the artery. I judged it would be very imprudent to introduce into so narrow and deep a wound, especially as it would be placed between two such important vessels or parts, as the carotid and parvagum, and where the least motion of the patient might cause a wound of one or

other of them. The proper instrument, in my opinion, for this part of the operation, is a knife, the size of a small scalpel, with a rounded point, and cutting only at the extremity; this was used and found to be very convenient for this stage of the operation. It can be introduced into a deep and narrow wound among important parts, without the hazard of dividing any but such as are intended to be cut."

"On arriving at the subclavian artery, it appeared to be considerably larger than common, and of an unhealthy colour, and when I exposed it to the extent of half an inch from its origin, which was all that the tumour would permit, to ascertain this circumstance more satisfactorily, my friends concurred with me in opinion, that it would be highly injudicious to pass a ligature around it. The close contiguity of the tumour would of itself have been a sufficient objection to the application of the ligature in this situation, independent of the apparently altered state of the artery."

"While separating the cellular substance from the lower surface of the artery, with the smooth handle of an ivory scalpel, a branch of an artery was lacerated, which yielded for a few minutes a very smart hemorrhage, so as to fill the wound perhaps six or eight times. It was about half an inch distant from the innominata, and from the stream emitted, was about the size of a crow quill. It stopped with a little pressure. I can scarcely believe this to have been the internal mammary, from the hemorrhage ceasing so quickly; though, from its situation, it would appear so; and if from some irregularity it were not the superior intercostal, it must have proceeded from an anomalous branch."

"With this appearance of disease in the subclavian artery, it only remained for me either to pass the ligature around the arteria innominata, or abandon my patient. Although I very well knew, that this artery had never been taken up for any condition of aneurisms, or ever performed as a surgical operation, yet with the approbation of my friends, and reposing great confidence in the resources of the system, when aided by the noblest efforts of scientific surgery, I resolved upon the operation."

"The bifurcation of the innominata being now in view, it only remains to prosecute the dissection a little lower behind the sternum. This was done mostly with the round edged knife, taking care to keep directly over and along the upper surface of the artery. After fairly denuding the artery upon its upper surface, I very cautiously, with the handle of a scalpel, separated the cellular substance from the sides of it, and

the artery was tied about half an inch below the bifurcation. The recurrent and phrenic nerves were not disturbed in this part of the operation."

"In no instance did I ever view the countenance of man with more fluctuations of hope and fear, than in drawing the ligature upon this artery. To interrupt suddenly one-fourth of the quantity of the blood so near the heart, without producing some unpleasant effect, no surgeon, a priori, would have believed possible. I therefore drew the ligature gradually, and with my eyes fixed upon his face, I was determined to remove it instantly if any alarming symptoms had appeared. But, instead of this, when he showed no change of feature or agitation of body, my gratification was of the highest kind.

"Dr. Post now asked him if he felt any unpleasant sensation about his head, breast or arm, or felt any way different from common, to which he replied that he did not. Immediately after the ligature was drawn tight, the tumour was reduced in size about one-third, and the course of the clavicle could be distinctly felt.

"The parts were now brought into coaptation, and the integuments drawn together by three interrupted sutures and adhesive plaster; a little lint and additional straps completed the dressings. Three small arteries were tied in the course of the operation; the first was under the sternum, and divided with the external part of the mastoid muscle, and from its course may have been a branch of the internal mammary reflected upwards; the second, in raising the inner edge of the mastoid muscle, about the upper angle of the longitudinal incision, and must have been the most descending branch of the superior thyroid; and the third, was a branch of the inferior thyroid, and cut while raising the sterno mastoid muscle." The operation occupied about an hour. "Ten minutes after the operation the pulse is regular, and not the least variation can be perceived; it beats sixty-nine strokes in a minute." I must refer to the doctor's detail of the case for further particulars respecting the treatment, symptoms, &c. I have thought proper to state the operation at length, first for the purpose of comparing it with other methods proposed, and, in the second place, to point out some circumstances I cannot entirely approve.

41. I would beg leave to differ in the opinion, that a knife, "rounded at the point, and cutting only at the extremity," is the safest or most convenient instrument. The fact is, that the parts, likely to come into contact with the edge of a com-

mon small scalpel, can always be seen and held aside; whereas, the parts below the end of a round pointed knife, being opake, every stroke you make downwards, must be in uncertainty. Catch the different layers of fascia, and membranes, with dissecting forceps; and raising them a little you may always, with much safety and certainty, divide the different structures in succession. Dr. Mott would, I am confident, use any knife with equal safety, but I must protest against putting his knife into the hands of a young surgeon as a thing upon which he may rely. In pursuing the method which I suggest, and which is common, no mistake will arise in the hands of any surgeon competent to the task. In this operation the "internal mammary or an anomalous branch of an artery" was wounded, while opening the membranes around the innominata. I have related cases from Dr. M'Clellan and others, paragraph 32, which go to prove, that such an artery is in general to be expected, but there is not the least room for admitting, that the internal mammary would be wounded in this situation. If we recall to mind that the mammary is given off at the inner end of the *incurvature*, passing on the outside of the pleura, so as not to be nearer to the arteria innominata, in any part of its course, than is the vena innominata; not even in general getting under the sternum, but passing along its edges; at least this is the case in the upper third of the sternum. We have nothing then to fear from the internal mammary.

The innominata having been exposed, "*a round silken ligature was* now readily passed around it, and the artery was tied about half an inch below its bifurcation." Believing, as I do, that this was the only misstep in the operation, and deeming the circumstances connected with the ligature of the first importance, I shall leave this matter for further investigation, after I have spoken of the different methods of operation. "The recurrent and phrenic nerves were not disturbed in this part of the operation;" that is, separating the arteria innominata. By turning to paragraph 33, we shall see that these nerves are not at all likely to come into danger. Although, perhaps, not a matter of much importance, yet I would object to the plan of *dissecting and turning back* the integument, and afterwards the muscles; because it necessarily prolongs the operation, increases the amount of pain, adds to the risk of wounding arteries, and I cannot conceive of any possible advantage growing out of this method of procedure.

Dr. M'Clellan's operation, with remarks.

42. In the third volume of this Journal, Dr. M'Clellan has suggested a method of getting at the arteria innominata, which he considers preferable to that of Dr. Mott. I shall proceed to give his own account of it, and afterwards offer some reflections. The doctor tells us, that he performed the operation many times upon the subject with facility and success. "I make an incision two inches long, from the top of the sternum directly upwards along the centre of the trachea, and expose the external cervical fascia. On dividing this fascia, a number of small veins will appear enclosed in loose cellular texture. As they run in the same direction with the trachea, there can be no difficulty in avoiding them. But the clavicular vein (left innominata) requires some caution. I deepen this incision towards the trachea, till the deep cervical fascia is brought into view. Beneath it the sterno hyoidei lie nearly in contact; the central line which separates them being no more than two or three lines wide. I cut through the fascia directly over this line, and expose the rings of the trachea. With the handle of the scalpel, the right sterno hyoid and thyroid muscles are now to be pushed from the trachea, and the right thyroid vein appears running to the great transverse vein (left innominata.) When this is of the common size, I carry the point of the knife outside of it, and very cautiously cut through the cellular and adipose substance, till the innominata is brought into view. After the external sheath is laid open, it is very easy to detach the artery from it all around by the handle of the scalpel, and then a ligature can be conveyed beneath it without any hazard of including the cardiac nerves.

"The artery here lies so deep, and the cavity of the wound is so narrow, that it is impossible to pass the ligature with one of the common curved needles, without very much disturbing its adhesions with the surrounding texture. I have practised with all the different instruments that have been used for the purpose of securing deep seated arteries, and am fully convinced that the forceps invented by Dr. Physick, in the year 1800, for the purpose of taking up the pudic artery, is altogether superior to any other contrivance. The doctor prefers a needle about an inch and a quarter long and very much curved; and says, that it is best to pass the needle under the artery, from right to left, and as soon as its point comes up from under the artery, it should be seized with a pair of common forceps. "If any portion of the artery has

been detached from its sheath, two ligatures should be employed." I would object here to two ligatures; there would be no excuse for a surgeon who would bare more of the artery than necessary; and now that so many cases of single ligature have been reported on different arteries, it must never be used as a matter of choice.

Remarks upon the operation proposed by Dr. M'Clellan.

43. The paper of Dr. M'Clellan having come to hand, in 1820, January number, I proceeded, during that winter, to test his views by a set of experiments, the result of which induced me to form a very favourable opinion of his plan, and in two or three succeeding winters, I demonstrated, to classes of young gentlemen, the facility with which the arteria innominata, the right subclavian within the *segment*, and the carotid at its root, could be tied by this plan; and without, in a single instance, injuring any part I did not wish to act upon. Subsequent reflection has, however, induced me to think less favourably of this method than formerly. I therefore proceed to state my objections.

In paragraph 23, I have noticed the knobular form of the middle of the *segment*, at the sterno clavicular junction, by which the area of the cervical base is lessened at this part, and from which we may see that the artery lies deep. And, in paragraph 23, I have noticed the fact of the sterno mastoidei standing high above the trachea, so that at the top of the sternum and over the *posterior line* there is a considerable hollow. I am aware, that when the parts are in their natural state, by inclining the head of the patient forward, we can easily press the sterno mastoid to one side, and in a great degree remove the objection suggested above. But several circumstances may present themselves which will strongly forbid the employment of the method in view. Dr. Mott tells us, that "the internal jugular vein was encroached upon by the swelling, which made this part of the operation of the utmost delicacy, from the morbid adhesion of that part of the clavicular portion of the muscle to it, which was detached." Now I think it is plain, that this *swelling* and *attachments* would have presented a very serious obstacle to the attempts at pushing to the right side the sterno mastoid, and the sterno hyoid and thyroid muscles, as recommended by Dr. M'Clellan; whereas, by dividing and turning up those muscles, we actually remove all that covers the arteria innominata, and have free access to it and the subclavian and carotid. And

that these muscles may be divided with safety, we might not only safely infer a priori, see paragraph 31, but the operation of Dr. Mott, and Professor Graefe clearly demonstrated that the apprehension of Mr. Burns and Dr. M'Clellan, respecting danger from the admission of the atmospheric pressure upon the pleura, between the subclavian artery and the *segment*, is entirely unfounded; and this remark applies with equal force to the chamber of the mediastinum.

I have noticed, paragraph 28, the circumstance of there being under the external cervical fascia, a mass of fat equally thick as the upper bone of the sternum, and in which are glands liable to disease. Any considerable enlargement of one or more of these glands would interrupt materially our efforts at pushing off to the right side, the muscles situated over the arteria innominata. Dr. M'Clellan has seen this gland diseased. We have also seen that the Doctor has met the internal thyroid vein much enlarged, and talks, paragraph 42, of cutting inside or outside of it, according to its condition. Can there be a doubt of our having more easy access to the arteries, and best avoid this vein, by uncovering it, rather than digging down through an oblique wound beyond it, and through this wound encircling the arteria innominata with a curved needle. Another very serious objection to the method under consideration, grows out of the fact of the thyroid gland, sometimes extending down under the end of the sternum. Mr. Burns, page 253, has seen this gland attached to the arteria innominata; and I have seen, during the present year, a subject having a neck remarkably short, in whom the gland actually descended under the end of the sternum, and was firmly attached to the trachea. This subject had been an old man, so remarkable, that as the body lay on the back, the chin was within one inch of the sternum; the least inclination of the head laid the chin on the sternum. In this subject there was not only an obstacle to the *anterior operation* of Dr. M'Clellan, from the circumstance of the gland being in the way, but so near was the chin to the *segment*, that another serious difficulty would have grown out of the want of space; and, yet, by uncovering the parts, and getting down perpendicularly, as we do upon dividing the muscles, we could have effected our purpose. There was, nevertheless, the usual number of vertebræ, but they were thinner than usual, as also the intervertebral substance, so that there was but little freedom in the motion of the bones.

Upon the whole, I think the method of Dr. M'Clellan entitled to attention, and that in cases where we can be assured

that the parts are natural in formation, where there are no great encroachments from aneurismal or other tumours, this method is, perhaps, entitled to consideration; because, in its performance, the least possible injury is done to the parts involved in the operation. I feel constrained, however, to say, that I fear it could not be performed with the same facility upon the living body as upon the subject, viewing the affair in its mechanical bearings only. In the living body, the tension of the left vena innominata, and of all the vessels, and even the fascia and muscles, will present difficulties which do not exist in relaxed dead subjects. I would add further, that had I occasion to operate upon the arteria innominata, I would not adopt this method without, in a first case, trying the method by division of the muscles.

Before closing this article, I would call attention to the proposal of Dr. M'Clellan, of confining the thorax by means of bandage, before proceeding to the operation; see his paper, Medical Recorder, vol. 3. By referring to paragraphs 31 and 34, we shall see that owing to the anterior and upper fold of the pleura being somewhat loose and floating, pressure upon the thorax will force the upper point of the lungs even above the *recess*, carrying, in that case, the pleura upwards, and upon it will lie the most important cervical nerves, &c.; what are we to expect, then, by forcing the lung high into the *recess*, and it will not be contended that we can suspend the action of the lungs during our operation.

Some Account of Dr. Harrison's Operation.

44. It remains to say something of the operation proposed by Mr. Harrison, in his invaluable little work upon surgical anatomy. Page 18. "Make an incision two inches in length along the anterior edge of the sterno-mastoid muscle, terminating at the sternal end of the clavicle; from this make a transverse incision outwards above the clavicle, about an inch and a half long, *the flap of the integuments should be raised a little upwards and outwards;* the sternal part of the sterno-mastoid is thus fully exposed; behind it pass a director, on which this portion of the muscle, as also a few of its clavicular fibres, are to be divided. In performing this part of the operation, care should be taken to avoid those small veins and arteries that lie behind this muscle, by keeping the director close to its posterior surface. The muscle being thus divided, *you gently press to either side some loose adipose substance that now appears, and the surface of the sterno hyoid*

and thyroid muscles will be exposed; the director should then be carefully insinuated behind these individually, keeping the instrument close to their fibres: these being divided, and the sides of the wound separated by broad retractors, and by carefully removing a little cellular membrane, the trunk of the right carotid artery may be seen arising from the arteria innominata; the jugular vein and par vagum lying to the acromial side; the curved aneurismal needle may then be passed around the arteria innominata, directing it from below upwards and inwards, and keeping it close to the vessel, to avoid wounding the cardiac nerves." We are advised where the clavicle is carried up by aneurismal swelling to depress the arm; this will be considered hereafter.

To my apprehension, we have here pointed out the best method which has been, or is likely to be suggested for tying the arteria innominata. We should not, however, lose sight of the fact, that Mr. Harrison had the advantage of seeing the detail of Dr. Mott's operation; nor should it be forgot, that Dr. Mott commenced his operation with the intention of taking up the subclavian artery, and therefore, probably, extended his dissections further than he would have done, had he merely aimed at the innominata. I am particularly pleased with Mr. Harrison's account of raising the flap of integument "a little." It is extremely desirable to avoid all unnecessary irritation so near an artery, which must heal, by the first intention, or not at all. There can be no advantage in turning back the different layers of parts, except so far as to get a distinct view of the vessels, under the sterno mastoid muscle, and those again under the sterno thyroid. But if there be objections to too free dissections, in turning back different layers of structure, the same objection applies with equal force against Mr. Harrison's advice, in recommending the removal of a portion of cellular membrane, lying between the sterno thyroid and the large arteries. I need scarcely add that I would operate as advised by Mr. Harrison.

Mr. Harrison tells us to apply a ligature, without specifying the kind. In my opinion, this is of vital importance, and upon it mainly, other circumstances being favourable, depends the success of the operation. I wish here merely to say, that we should by all means apply a soft leather ligature. But, of so much importance do I consider this matter, that I shall presently offer my views at length.

What may give occasion for the Operation.

45. The question now naturally arises, what may give rise to the necessity for tying the arteria innominata? I am not aware of any cases having occurred requiring this operation, except aneurism, but I can readily imagine the possibility of punctured wounds occurring, which might call for an immediate operation. It is probable, that in most cases of wounds at the root of the neck, which would injure the innominata at its outer end, of the subclavian near its origin, or the carotid at its root, would injure the nerves or veins, or after penetrating so far, if the artery was opened at all, it would be apt to be so much opened as to lead to speedily fatal hemorrhage. But it must be admitted, that punctured wounds by a shot, by the point of a sword or bayonet, &c. might slightly puncture the artery, and lead to diffused aneurism, and call for the operation.

Since the suggestions of Mr. A. Burns, two operations have actually been successfully performed, as regards the mere operation; and doubtless other cases will occur, and, I have no doubt, will do great credit to the first successful operator. It would be unnecessary for me to enter into the detail of symptoms and appearances by which we are to distinguish aneurism of the subclavian within the *segment.* This will be found fully detailed in various books treating upon surgical subjects.

(*To be continued.*)

Art. IV. TRANSACTIONS OF THE MEDICAL SOCIETY OF VIRGINIA.

The Medical Society of Virginia was formed in the beginning of 1821, by a voluntary association of physicians in Richmond and Manchester, to whom were soon after added several practitioners residing in the country.

After a period of about three years, most of the members united in an application for a charter; and were incorporated by an act of the legislature of Virginia, passed on the 2d of January, 1824, the principal provisions of which are the following:

1st. That the Society may enact all by-laws deemed necessary and proper for attaining the objects of their institution, and not contrary to the constitution or laws of the United States, or the commonwealth of Virginia.

2d. To require of persons admitted to membership, such admission fees, and annual contributions, as a legal quorum may enact; recoverable on motion with ten days notice, before either of the courts of law held in the city of Richmond, or in any county, city, or corporation, whereof the member failing or refusing to pay, shall be an inhabitant.

3d. That the Society may hold such buildings as may be required for immediate personal accommodation, as a Society, lecturing and dissecting rooms, and other apartments manifestly necessary or convenient for the promotion of medical knowledge; and also other real property, whereof the clear annual revenue shall not exceed two thousand dollars.

Soon after its formation the Society established a constitution and by-laws, which have undergone various alterations. The principal amendment is the repeal of a regulation, requiring that all members, after admission, should present essays in succession: thus the furnishing of essays or other communications, is now left entirely to the choice or convenience of the members.

The following are the constitution and by-laws according to the latest amendments.

Richmond, April 20th, 1826.

CONSTITUTION OF THE MEDICAL SOCIETY OF VIRGINIA.

The objects contemplated by the Medical Society of Virginia, are, the collection, diffusion, interchange, preservation, and general advancement of medical knowledge throughout the state.

Its constitution embraces the qualifications, election, and duties of its members, the election or appointment and duties of its officers and committees, and provides for its own amendment, whenever the necessity and propriety of amending it shall be sufficiently obvious. The following are its provisions:

ARTICLE I.

Of Admission to Membership.

§ 1. Every candidate for membership must make application to the Society by a written document bearing his own signature. Such application is to be presented and seconded by members having a competent knowledge of the applicant, and can only be received at a stated meeting. The application shall lie over one month at least for the consideration of the members, after which, the candidate shall be balloted for, and the approving votes of three-fourths of the members present, shall be necessary to his admission.

§ 2. But previously to a candidate being balloted for, his qualifications shall be duly ascertained, and shall be as follow:—

(*a*) The candidate shall have received from some public school, society, college, or university, legally authorized, a degree of Bachelor or Doctor of Medicine, or Surgery, or a diploma or other certificate, evidencing his capacity to practise medicine or surgery.

(*b*) Where such degree, diploma or certificate has not been obtained, the candidate shall furnish satisfactory evidence of having regularly attended in some public school of medicine, lectures on anatomy, surgery, the theory and practice of medicine, materia medica, and chemistry, and of having passed in such academical attendance two full courses, and afterwards maintained a respectable standing as a practitioner for five years.

(*c*) Or that he shall have attended one course of lectures in the before mentioned branches of medical science, and shall afterwards have practised with credit for eight years, submitted to a satisfactory examination before the society, presented a medical essay, and publicly defended it.

§ 3. A copy of each essay after being read to the society, shall be delivered to the librarian.

ARTICLE II.

Of Honorary Members.

§ 1. Honorary membership shall only be conferred on distinguished medical characters residing beyond the limits of the commonwealth of Virginia, on presidents of the society who shall have discharged their official duties with fidelity and attention, and on members of five years standing, who shall have rendered eminent services to the society.

§ 2. The election of honorary members can only be made at the annual meetings of the society, and not more than four shall be elected in any one year.

§ 3. The election of honorary members shall be by ballot, and the concurring votes of four-fifths of all the members present, shall be necessary to an election.

§ 4. Honorary members shall be exempted from the payment of all pecuniary contributions to the society.

ARTICLE III.

Of the Duties of the Members.

All the members of this society (honorary members excepted) shall, at the time of their admission, pay to the society a fee of ten dollars, and shall also pay once a year (to fall due on the first day of January each year) such contribution as the by-laws may from time to time prescribe.

ARTICLE IV.

Of Resignation of Membership.

Any member wishing to withdraw from this society, shall be permitted to do so on his written resignation, after he shall have presented the treasurer's receipt for all moneys due.

ARTICLE V.

Of Certificates of Membership.

Every member shall be entitled to a certificate of his membership, after he shall have paid his admission fee. The form of such certificate to be prescribed by the by-laws.

ARTICLE VI.

Of Forfeiture of Membership, or other censure.

§ 1. Any member who shall be guilty of gross misconduct, either as a member or citizen, or shall be palpably negligent of his duty, either as a

member or officer, shall be liable to expulsion or such other censure as the society may approve.

§ 2. But no judgment of expulsion, suspension, or other censure shall be passed against a member, till after at least one month's notice and a fair trial. And no member shall be expelled unless by the votes of three-fourths of the members present. And should such member come forward within the six months succeeding his expulsion, and offer a sufficient explanation, he may be re-instated without expense, provided three-fourths of the members present agree thereto.

ARTICLE VII.

Of the Meetings of the Society.

§ 1. The society shall be convened in the city of Richmond, on the third Saturday of every month.

§ 2. Seven ordinary members shall constitute a quorum for the transaction of all business to which the society is competent.

§ 3. Special or intermediate meetings may be held, by resolution of the society at its stated meetings.

§ 4. The stated meeting in December shall be considered the annual meeting.

ARTICLE VIII.

Of the Election of Officers and Committees.

§ 1. The officers of this society shall consist of a president, a senior and junior vice-presidents, a recording and corresponding secretaries, a treasurer, a librarian, and committee of publication of three members, all of whom shall be chosen by ballot, at each annual meeting; and the election shall have precedence of all other business at that meeting, after reading annual reports.

§ 2. In conducting the annual election, two members at least, shall be nominated as candidates for each office, who shall withdraw while the other members are preparing and delivering their ballots.

§ 3. When the ballot is closed, the acting president shall invite the candidates to return to the hall, and cause the ballots to be examined, and report the state of the poll.

§ 4. Should more than two members be balloted for, the member having the smallest number of votes on the second or any subsequent ballot, shall not be voted for in such ballots as may follow.

§ 5. In all cases of election, a majority of the suffrages of all the members present, shall be necessary to constitute an election.

§ 6. The president, senior and junior vice-presidents, may be elected for two successive years, and shall then be ineligible for the next two years; but the other officers may be re-elected as often as accords with the pleasure of the society.

ARTICLE IX.

Of the Duties of Officers and Committees.

§ 1. It shall be the duty of the *President* to preside at all meetings of the society, to preserve order, and regulate the debates according to the most approved rules of parliamentary proceeding: *Provided*, any member shall have the right of appealing to the society, from the president's decision on any question of order. The president shall appoint all special committees, except the committee of publication.

§ 2. In the absence of the president, the *Vice-presidents*, according to seniority, shall perform all the duties appertaining to the chair; but if neither

be present, the society shall elect a member, to act as president for that meeting.

§ 3. The *Recording Secretary* shall keep a correct list of all the members of the society, arranged in the order of their admission. He shall keep accurate minutes of all the proceedings of the society, including the names of members present, and from time to time transcribe them into the record book, in a fair and legible hand.

Such papers of the society as are not necessarily recorded, he shall preserve in distinct and regular files, holding them always accessible for the inspection of the members.

Whenever any special committee is appointed, the recording secretary shall furnish the chairman with a copy of the minute of appointment, as well as any documents that may be essentially connected with the duties of the committee, or the chairman may require of him.

§ 4. The *Corresponding Secretary* shall notify all members and officers of their election; he shall write and answer letters in behalf of the society; and, in general, manage their distant correspondence, as particular exigencies, or the resolutions of the society may require.

He shall read to the society all communications and answers which he may have received or made, during each preceding recess, and then deliver them to the recording secretary or the librarian, according to their several characters.

§ 5. The *Treasurer* shall receive all moneys arising from the admission and contribution of members, and shall pay the same agreeably to the orders of the society, certified by the member presiding.

He shall keep regular accounts with the society, and between the society and the members thereof; and immediately preceding each annual election, or oftener if required by the society, shall render detailed statements of the business of his department, and shall deliver up to his successor, the books, papers, money, or other property of the society remaining in his hands.

For the faithful performance of his duties, the treasurer before entering thereon, shall execute bond to the president and vice-presidents, for double the amount with which they, or any two of them, shall judge he may probably become entrusted during his continuance in office.

§ 6. The *Librarian* shall have under his custody, and it shall be his duty to take special care of all the books, essays, and whatever may constitute any part of the literary or scientific stock of the society.

The books he shall give out for the perusal of the members, under such regulations as the by-laws may direct; but no manuscript shall be carried out of the library without a special order from the society, except by the members of the committee of publication.

§ 7. It shall be the duty of the *Committee of Publication* to select from the essays of the members, and other communications made to the society, such as they may think worthy of being published.

They shall, whenever they deem it expedient, report to the society that they have selected a sufficient number for publication; and when the society deem it proper, the committee shall publish their selection, under the title of the "*Transactions of the Medical Society of Virginia.*"

After the publication of each number or volume of the Transactions, the committee shall return to the librarian, all papers belonging to the society.

ARTICLE X.

Of Amending the Constitution.

Every proposition for amending this constitution shall, on being seconded, be handed up in writing to the chair. It shall then be audibly read by the recording secretary, after which the society shall decide whether it pass to a second reading. If they resolve in the affirmative, it shall be placed on

file to be read at the next regular meeting, when the question shall be taken on its third reading, and if so determined, the proposition shall again be read and finally decided at the third meeting; but shall not even then be adopted, unless with the concurrence of three-fourths of the members present.

BY-LAWS OF THE MEDICAL SOCIETY OF VIRGINIA.

SECTION 1. Two days previous to each stated meeting, the recording secretary shall give notice thereof in writing, to each member residing in Richmond and Manchester.

§ 2. As soon as the meeting is formed, the president shall instruct the recording secretary to read over the minutes of that immediately preceding.

§ 3. Reports of committees shall be called for.

§ 4. When members resident in the country present essays to the society, they shall be allowed precedence of members in town, in the reading thereof; and essays or other communications from gentlemen who are not members, shall have precedence of both.

§ 5. In discussing questions before the society, no member shall speak more than twice on the same subject, unless by permission from the presiding officer.

§ 6. After the society is organized, no member shall leave the hall without the permission of the presiding officer.

§ 7. The hour of meeting for the society shall be early candle light.

§ 8. The annual contribution of each member, shall be five dollars.

§ 9. The following regulations shall be observed in the use of the library.

(*a*) The librarian shall keep a book in leger form, wherein he shall open an account with each member of the society; the debit side showing the title of each book given out, opposite to which the member receiving it, or his accredited agent, will sign his name, the credit side showing the title of each book returned.

(*b*) It shall be lawful for any member to retain a folio one month, a quarto three weeks, and an octavo or smaller volume a fortnight, when they shall be returned to the library.—But if no application shall have been made for them while out, the member first using them may again have them for the same length of time.

(*c*) If any member shall injure or deface, or omit to return any book, he shall be liable to the society for another copy of equal quality, or its alternate value in money, and should the book be so injured, defaced, or omitted to be returned, belong to a work of more than one volume, he shall be liable to the society for the whole work, or its alternate value: and in either case, on making the compensation thus required to the society, he shall be entitled to the work injured, defaced, or omitted to be carried back to the library.

(*d*) The librarian shall also keep a correct list of the books in the library, either prefixed to the leger, or in a separate book.—A copy of this list, made out in a fair hand, with any appropriate remarks on the state and condition of the library, it shall be the duty of the librarian to hand in to the society, at each stated meeting in November.

§ 10. Every proposition for the enactment or amendment of a by-law, shall be specifically set forth in writing at a stated meeting; and if seconded, shall lie over for one month, after which, the question of its adoption may be decided by a majority of the members present.

No. 1. *Dissertation on Chronic Peritonitis.* By Dr. John Dove. *Read May* 19, 1821.

Permit me, gentlemen, to felicitate you on the apparent success attending this, our first effort, to establish one of those societies, from which has resulted, in numberless instances, such important information to the medical world.

To these associations, when well directed, are decidedly due the development of many medical facts, which have enriched our science, and engaged the speculations of ingenious theorists, in every civilized country; and fondly am I induced to hope, that under the fostering protection of a benign Providence, the infant Medical Society of Virginia may, even in our day, realize the pleasing anticipations of its founders, and crown their zealous efforts, by becoming an useful auxiliary in the advancement of medical knowledge.

Deeply impressed with the imperious nature of the obligation I owe this society, in common with all its members, which requires of us to suggest whatever may appear to our minds best calculated to promote its well being, and attain the laudable object of its establishment, I trust it will not be deemed intrusive, nor foreign to the object of our association, if, in submitting this first essay required by the rules of our association, I should respectfully, but earnestly recommend, that our essays should generally contain a plain and faithful statement of cases in medicine and surgery, comprising the symptoms, seat, probable or supposed cause, treatment, including doses and effects of medicines, results, and, as often as possible, a minute description of the appearances on dissection, accompanied by such remarks as each practitioner may think it important to communicate.

Let these form the basis of all our subsequent reasonings, and in advancing to conclusions, let us listen, with undeviating respect, to the sober dictates of an impartial judgment, unbiassed by preconceived opinions, or by views to which we may have been previously attached; such views, and such opinions are the leading sources of error in reasoning; they spring from ourselves, and are discarded with great reluctance, frequently with extreme mortification and wounded pride; but the man who has firmness enough to sacrifice them upon the altar of truth, will be amply compensated by con-

scious independence, and the successful career of investigation, to which their removal inevitably opens the way.

Where now, I would ask, are the imposing theories of Paracelsus, Hoffman, Stahl, Van Helmont, Sydenham, Boerhaave, Cullen, Brown, Darwin, and Rush? to say nothing of the many minor hypotheses which have amused only for a day? They have passed to rest with the illustrious authors of their existence, whilst the truths they taught, which were the legitimate deductions from well established facts, tested by experience, live in perpetual record, immortal monuments of their indefatigable zeal and industry in the promotion of this noblest of sciences.

If these suggestions shall carry greater conviction to your minds, when aided by the sanction of respected authority, and it is very natural they should, it is with infinite gratification that I am enabled to call your attention to the opinions of our venerable and highly enlightened president, who, in a paper on "Reasoning in Medicine," which merits more publicity than his modesty permitted, has emphatically said: "Thus have arisen those systems of physic, which, with the title of Mechanical, Chemical, and Stahlian, have made the greatest figure in modern times. They owe their premature birth to our eager desire of explaining every thing; which cannot wait until the progress of observation has ascertained all the principles that are necessary to a perfect theory. Their authors are led away by an excessive fondness for simplicity, which they consider, perhaps, as ornamental to their ideal fabric. They pretend to explain all the operations in the animal body, from the view of one set of causes; just as they trace all the various affections of the soul to one common principle."*

In proceeding to the discharge of my more immediate duty, I propose offering a few observations on the disease commonly, but in my opinion improperly, denominated chronic peritonitis, and shall subjoin a fair and candid history of the symptoms, progress, and termination, with the treatment pursued, as well as the appearances on dissection, in two cases, occurring under my own immediate notice.

In entering on this detail, I feel considerable embarrassment, from reflecting that this truly interesting derangement of the animal economy, has heretofore passed unnoticed, or has been but partially attended to, although I am under the impression that its appearance is by no means unfrequent,

* M'Clurg, on Reasoning in Medicine.

and that too among a class of people, whose situation it is often our duty, in the double capacity of philanthropist and physician, to alleviate and soothe; I mean the black population of Virginia; from motives of policy kept in entire ignorance, they are necessarily the dupes of superstition, producing a derangement of system, called by them 'tricking.'

I shall now proceed to give a history of these cases, and then draw my own inferences and conclusions.

Case I.—On the 21st of February, 1820, I was requested to visit ——, a negro man, belonging to Capt. J. P. Shields, who had been complaining, for more than three months, of some fulness about the abdomen, not amounting to pain; it was increased by eating. There was but little sensibility manifested on pressure. The pulse was 100, and in other respects nearly natural: tongue white, skin cool and dry; he had little thirst, and some degree of head ache.

As I attributed all the symptoms of this patient to habitual constipation, I directed a brisk cathartic of calomel and jalap.

22d. The medicine has acted freely, and the patient feels considerably relieved.

I directed a mild aperient of sulphate of magnesia and chamomile tea, with very light diet.

23d. He thinks himself nearly well, and speaks of going to work, though the abdomen is still swelled.

24th. I was sent for, being informed that he was much worse, and found his abdomen as much enlarged as ever; his pulse 120, small and slightly tense; his urine clear and copious, tongue white, countenance peculiarly bright, sensibility to pressure on the abdomen a little increased, and is averse to a recumbent posture, from the hurried respiration produced by it. He has had one or two alvine evacuations since yesterday, showing nothing remarkable, is very captious, and has no appetite for food.

Conceiving it probable that the liver might be in a state of what is commonly termed chronic inflammation, and that the apparent derangement proceeded from torpor of that viscus, I directed a large blister to be applied over the abdomen, extending to the right hypochondriac region, and a bolus of calomel, followed by a solution of sulphate of magnesia, and light diet.

25th. The medicine has acted freely, and the blister drawn well; the patient feels much relieved, his pulse is 100, and small; he complains of some degree of prostration, or rather disinclination to motion; has taken some soup, which distressed him very much with flatulence for a short time; his

abdomen is still enlarged, though smaller, and he feels a sense of creeping, over the integuments, and a burning inside.

With a view of ascertaining whether any light would be thrown on the disease, I took from his arm four ounces of blood, which on cooling was somewhat sizy, but otherwise of a healthy appearance.

Continue the solution and light diet.

26th. The patient has had several copious watery stools from the solution, feels somewhat more relieved from the uneasy sensations in the abdomen, and some return of appetite; his pulse 100, and still small, tongue nearly clean, skin moderately warm, thirst a little increased, and abdomen smaller.

The same treatment was continued.

27th. Is still better, has natural evacuations, and has slept well. His pulse 100, and small. Has taken some exercise, and craves solid food; has some increase of pain, which seems confined to the left hypochondriac region. He now, for the first time, stated to me that he believed himself "tricked," and related the circumstances giving rise to this opinion. Omit the purgative solution, apply a large blister over the seat of pain, and give fifteen grains of Dover's powder.

28th. Has been largely sweated by the powder, and seems very captious. The blister has drawn well, pulse still 100, and small, has had no evacuation from the bowels during the last thirty-six hours, and seems more swelled.

Repeat the calomel, and continue the purgative solution.

29th. Has been freely evacuated, feels greatly relieved, and wishes to go out of the house; says he is entirely free from pain, and has some appetite; pulse 118, and small; tongue clean; and he has discharged several large worms, (Tænia Lumbrici.)

I directed him to take another dose of Dover's powder, and to drink freely of some diluent.

March 1st. The patient feels better, and has slept well, but had no perspiration, pulse still 100, soft and small.

Continue the light diet and take more exercise.

2d. Says, "*he is as well as he is going to be*," and wishes to go to work, pulse still 100, and small, and the abdomen a little swollen and hard. At his earnest request, I dismissed him, charging him to live regularly and abstemiously, and, as I have discovered that the round worm is not unfrequently the tenant of the bowels of adult negroes, producing in many instances great distress, I directed him to take the oil of wormseed occasionally. He continued, however, more dull

and inactive than in ordinary health, (being a sprightly and intelligent negro) until

May 5th. When my partner, Dr. Cabell, was requested to see him. On calling for this purpose, we were informed that he was out in the field, after the cow, an employment to which he had been directed, with a view to exercise. In a few minutes he returned, labouring under considerable difficulty in respiration, pulse 120, small, quick, and slightly tense, abdomen considerably enlarged, tongue white, though not furred, bowels costive, skin cold and husky, urine scanty and high coloured, and without appetite for food.

Directed a purgative of calomel and rhubarb.

6th. The purgative has operated, and he feels much relieved; has walked about the yard, and taken some veal soup, complains of stiffness about his legs and ankles, which are disposed to pit on pressure, and has no particular pain.

Repeat the purgative, and let him have wine and water made weak.

7th. I was requested to visit him with Dr. Cabell, and found him in great pain, from having eaten some baked peas, which had swollen his abdomen considerably. Pulse 120, intermitting and small, tongue clean and moist, skin cool.

Directed a purge, followed by an antimonial powder, morning, noon, and night, with a view of producing an alterative effect.

9th. I visited him again, and found his tongue clean, pulse 98, and more soft, evacuations natural, no thirst, and has taken more rest in bed, without being interrupted by difficult respiration.

Continue the antimonial powders.

10th. Found the patient in some distress about the bowels, his tongue clean, pulse nearly natural, appetite variable, skin cool and moist, abdomen less, but still somewhat swollen.

Continue the antimonial powders.

11th. Has passed a restless night, and feels inclined to lie down, his tongue a little more coated, pulse 100, and small, sense of prostration, and bowels constipated.

Let him have an injection every four hours, till his bowels are well evacuated, and let him have the wine more freely.

12th. The distress of respiration is considerably increased, which he attributes to a colic, or swelling of the stomach, and he can only sleep in his chair. The pulse is small, soft, and frequent; the tongue a little more coated, the evacuations more offensive and watery; the skin cold, and covered with profuse sweat.

13th. The patient lies down with ease; is still worse, though perfectly in his senses; asks for food, and wishes to get up. He died in the evening, without any of the distressing symptoms which usually precede dissolution.

Dissection. On Sunday, the 14th, I proceeded to examine the body, in presence of Drs. Cabell and Carrington; on exposing the contents of the abdomen, it was not until after much dissection, that I was enabled to bring into view any of the viscera, the entire mass of which was firmly agglutinated together, and to the parietes of the abdomen, by adhesions and thickenings of the peritoneal coat of the intestines, and lining membrane of the abdomen; there were occasionally small sacs, which were filled with a curdled kind of serum, of the consistence and colour of cream, and extremely offensive. I may safely say, there was not two inches of the intestinal tube, which was free from this general adhesion, resembling more the process of congelation by cold, than the ordinary adhesions effected by inflammation. The coats of the intestines were two or three times their ordinary thickness. The liver preserved a natural appearance, as did the spleen and pancreas; the mesenteric glands were a little enlarged, but otherwise of healthy aspect, and in some few instances, the interstices between the folds of the jejunum and ileum were filled with a hard, cartilaginous substance, resembling ordinary gristle.

It will be recollected, that this subject had suffered but little from the want of regularity in the economy of animal life, and was not much reduced in size.

Case II.—On the 5th of June, 1820, Mr. Joseph C. Haley sent to me a negro man named King, of sprightly and intelligent countenance, who had been accustomed, for many years, to work in a brick-yard, and for some time had acted as overseer.

He complained now of some difficulty in respiration which was so much increased by exercise as to disable him entirely from labour, his belly was considerably enlarged and hard, his pulse about 100, small and tense, his lower extremities swollen, appetite tolerable, evacuations from the bowels scanty, but of natural appearance; the tongue white and much furred, and the countenance remarkably lively. I ordered him a brisk purgative of calomel and jalap, and, if not materially relieved, to apply a blister over the abdomen and use a light diet.

7th. The cathartic acted freely, but without much relief of hardness and pain in the abdomen. A large blister has

been applied, since which he breathes with more ease. The tongue remains white, the pulse small and quick, but much softer, the evacuations are bilious and offensive, and the appetite good.

The blister to be dressed with basilicon.

8th. The patient thinks he is better. He has visited me this day at my office, distant upwards of a mile and a half from his residence. I ordered him a cathartic and cerate dressings to the blistered surface, and enjoined his staying at home and keeping still, apprehending that exercise might so influence his pulse and respiration, as to deceive me in judging of his symptoms.

9th. I found him engaged in moderate exercise, which he said seemed to ease the gnawing of his bowels, a symptom he now, for the first time, stated his belief to arise from a "trick" put upon him by one of his fellow servants whom he had repeatedly flogged while overseer, and who had threatened "to do for him." Appetite good, tongue clean, pulse still 100, and small evacuations healthy; the lower extremities are but little swollen, and the abdomen much reduced.

At this visit Dr. Cabell suggested the propriety of taking him through a gentle alterative course of mercury, to which the patient very reluctantly consented.

10th. The abdomen is still considerably enlarged, though in other respects the patient says he is much better; his pulse is small and frequent.

I concluded, at his earnest solicitation, to delay the mercurial course for a few days, and directed the application of a large blister, and that his bowels be kept open by a solution of magnesia in chamomile tea.

12th. I found him complaining less of the pain in his bowels, and using more exercise, and directed a continuance of the same general treatment, with dressings of basilicon to the blistered part.

13th. The patient much as yesterday, his bowels open, appetite keen, abdomen still swelled.

Same treatment continued.

15th. He feels relieved of every symptom except the difficulty of breathing from exercise, the abdomen is less swelled though hard, the pulse small and frequent.

16th. The patient, consenting to enter on the mercurial course, was directed to take a blue pill three times a day, and to use a diet principally of soup and vegetables.

21st. Thinks himself benefited by the mercury, takes exercise with more ease, and feels less of the gnawing in his

bowels, but still firmly believes himself "tricked." Tongue clean, pulse 108, soft and frequent, bowels costive, and extremities a little swelled.

Continue the pills with moderate exercise.

July 3d. The mercury has frequently purged him, but has indicated no effect of a constitutional kind. He is so much improved as to resume his ordinary employments, but occasionally complains very much of a gnawing pain in his belly attended with tightness. He continued very much in the same way till

August 18th. When he called on me, complaining of a griping pain, which he compared to the effect of hot embers inside of him; his pulse was 98 and feeble, appetite good, and tongue clean. He had experienced profuse salivation on the 3d inst. in consequence of exposure to a rain the day before, which had now nearly subsided. He can now walk up the Church Hill without stopping, which he had not been able to do for twelve months.

I directed him to continue the solution of epsom salt in chamomile tea, and, if much distressed with pain, to apply a blister and take a dose of castor oil.

I heard no more of my patient, till some time in December, further than that he had generally continued at work. About this time his master called on me stating that the complaint had returned, and that King wanted a black doctor, declaring that he was poisoned and should not get well under any other.

I advised him to apply a very large blister and give a cathartic. He continued however, says his master, to complain very much of his stomach, and said there was something working backwards and forwards in it like a person sawing wood. He was invariably relieved by the blister while kept running, and his appetite continued good, craving sauce or something sour. About this time he began to swell and continued worse till the 28th of January 1821, when he died.

The dissection was performed in the presence of Dr. Cabell and our students. On exposing the contents of the abdomen there were evident numerous adhesions of the intestines to each other, and to the abdominal parietes. Though these adhesions were less considerable than in the former case, they yet embraced the whole intestinal tube. The liver was considerably enlarged and its left lobe somewhat indurated. The stomach was thickened, particularly at the pyloric orifice, the spleen and pancreas were remarkably small, the mesenteric glands presented their usual appearance, and the peri-

toneal lining of the abdomen was much thickened, in spots the size of the palm of the hand. The thorax presented no deviation from healthy appearance, except that the heart was larger than common, and the pericardium contained about half a pint of water slightly tinged with blood.

Since the above dissection I have been called to a case of decidedly the same character, in a man belonging to the Union Hotel. But as he is now under medical treatment, I shall at present forbear to make his case the subject of report, promising if necessary to notice it at some future period.

During the last five years it has been my lot to attend to five cases, including those detailed, in all of which the patient was deeply impressed with the belief that he "was tricked, or done for." Not having been permitted to dissect the two first, I have not thought it necessary or expedient to report the treatment pursued, suffice it to say, that the symptoms and result were the same.

I should not have been thus minute, and perhaps tedious, in transcribing the minutes of the above cases (taken only for the purpose of aiding my memory in private practice) but that I find almost every author silent on this subject, only one having fallen into my hands wherein the derangement now presented is at all mentioned.

Dr. C. R. Pemberton, of London, in his excellent treatise on diseases of the viscera, has given his thoughts on what he terms Chronic Peritonitis, and from perusing it one would be led to conclude that this disease was by no means uncommon in his practice. That it was not peritonitis at any stage, I think may be fairly inferred from his very accurate description of the disease in question, as well as from the practice he adopted. The whole dissertation however on this subject seems to have been written without much reflection, and from his best recollection of the cases at some considerable distance from the time of their treatment. I shall proceed then without quoting his words in detail, to offer my objections to his views, and to expose the inaccuracies of Dr. Pemberton's reasonings, on what he terms chronic peritonitis. "The pulse" he says, "is somewhat accelerated, the tongue, particularly in the morning, is slightly covered with a white fur, there is considerable thirst, and yet I have observed no evening exacerbation, nor any flushing of the cheeks; on the contrary, the countenance is pale and doughy, and the patient always complains more of the tightness than pain."

In my practice the pulse has uniformly exceeded 100, and in most instances has been 120, slightly tense, small, and

quick, the thirst has been very inconsiderable, and the countenance so far from being doughy and pale, I have always observed to be lively and intelligent. Again, he says, "the tightness and not the pain seemed to be the cause of complaint," now the fact is, that both are occasionally distressing, and generally go hand in hand; but for establishing a name for the disease, it was necessary there should be little pain, and that of a character dependent on chronic action.

The adhesions the Doctor wishes to attribute to an effusion of coaguable lymph, as in the ordinary resolution of active inflammation, or at any rate to establish the previous existence of inflammatory action. Now, I think this previous inflammatory action can no where be shown in his work, particularly when he admits that one of its greatest characteristics and almost invariable attendants is absent, the evening exacerbation, with flushed countenance. For these reasons I consider the term peritonitis objectionable, as calculated to mislead young practitioners, and prefer to leave the disease without a name rather than to give it an erroneous one, until future observation shall ascertain the predisposing and exciting causes of the disease, whence it ought to derive its title.

Whatever these may be, in truth, I have little hesitation in avowing the opinion, that the disease consists in "an effort of nature to form a new peritoneal covering, for the purpose of supplying the place of one too defective in organization to subserve the economy of animal life." I am well aware that the entire novelty of this idea will be one great cause of its being received with great caution, or perhaps objected to entirely; if so, I trust some fortunate practitioner may be enabled to furnish one less objectionable; but till then I must retain my own.

I am led to this conclusion principally for the reasons just urged, and again, because the disease, after continuing for a year or two, has in most instances terminated in death, without any very obvious derangement in the economy of the animal frame, other than that of an inability to endure fatigue, which it is very improbable would be the case if it depended on an inflammatory action, the result of which would be to disorganize the part affected in a much shorter time, and consequently to produce many more of the symptoms of diseased action in the primæ viæ and chylopoietic viscera, generally attendant on such affections. I was not aware that I had a second to this theory of the action of the blood vessels of a part, till after I had prepared this piece

for the last meeting of the society, when I fortunately emt with the last edition of Baillie's Morbid Anatomy. In the remarks of that excellent author on the diseased appearances of the trachea, affected with what he terms polypus, he has the following words, "The trachea and its branches are sometimes lined with a layer of a yellowish or whitish matter, forming a sort of tube, which is applied to the inner surface loosely, ... "The inner membrane of the trachea seems to be perfectly natural, and the layer of adventitious membrane resembles exactly the coaguable lymph, which is formed in other parts of the body. I have no doubt therefore of its being that substance, since this disease (which is called polypus) lasts for a long time, and is not attended with symptoms of inflammation, it appears probable that the vessels of the inner membrane of the trachea possess a power of separating the coagulable lymph from the blood, and that this disease consists in a *peculiar action* of these vessels."

Again, the remedies which in my hands appeared to be most efficacious in prolonging life, were not such as are at all calculated to restrain inordinate action, but such as give a different direction to it, as mercury, blisters, &c.

Dr. Pemberton concludes (always keeping in view the inflammatory name of the disease) by relying chiefly, if not entirely, on blood-letting, which he advises once or twice a week, to the extent of six ounces. This is at any rate a very feeble practice, and forbids the impression of a cure being effected by it; if blood-letting alone is ever to be a useful remedy, I am inclined to think it must be when carried to a much greater extent; and again, I presume no practitioner would bleed unless he ascertained the pulse to require it by more unequivocal evidence, than merely being somewhat increased in frequency. Indeed, I should rather consider that symptom as forbidding the use of the lancet with any curative view, in all cases whatever.

With these few imperfect remarks, I dismiss this subject for the present, hoping they may have the effect of hereafter inviting the attention of the Medical Society to a more profound investigation of a matter so truly interesting, and anticipating with much satisfaction the relief to suffering humanity that may be reasonably expected to result from their inquiries.

No. 2. *Thoughts on Puerperal Convulsions, and the efficacy of Ergot in their treatment. Elucidated by cases. By* GEORGE CABELL, M. D. *Read 21st July*, 1821.

"*Dies docet.*"

THE peculiarly interesting period of attack, and the manifestly alarming symptoms which characterize puerperal convulsions, have long engaged a large portion of professional attention, and caused them to be classed with the most dangerous affections incident to the sex. Their treatment, however, appears to have been in a very unsettled state, as late as the days of Dr. Denman, who remarks, that "in consultations, he had observed the person who advanced his opinion in the most confident manner, generally prevailed upon the others to acquiesce in his sentiments; the records of experience not having been thought sufficient, or not so duly weighed, as to satisfy the mind, or to justify the forming an irrefragable rule of practice." "In unsuccessful cases, whatever had been done or omitted, had occasionally been blamed or regretted;" and, after a careful research, he concludes, "there is room for much improvement in our knowledge of their causes, effects, and treatment."

The opposite opinions, upon a late case, show that the light of science has continued too feeble to dissipate the shadows which then obscured this interesting subject, or, that we have not paid it due attention. With the hope of lessening this obscurity, I lay before the Society my views and opinions, founded upon much solicitous investigation. Should the ergot prove a valuable addition to the remedies heretofore employed in the treatment of this "ferocious disease," and save the life of a fellow being, or avert from suffering humanity, a single impending convulsion, I shall rejoice in its introduction. Apologies for defects in execution cannot remove them; therefore none will be offered. The performance is submitted to the critical judgment of the society, and must abide its fate. Should the discussion prove my speculations to be baseless, they will be cheerfully sacrificed upon the altar of science, with the consoling reflection, that an error detected is, at least, an approximation to truth.

About nine o'clock, P. M. on the 6th of March, 1819, I was requested, by Dr. Dove, to visit a lady in consultation, and received from him the following detail: "Yesterday morning I was requested by Mr. M. to visit his wife, supposed to

be in the eighth month of her first gestation. I found her a lady of very full habit, and was informed by herself, that some time in the previous night, she had felt a severe pain in her head, accompanied by a confusion of thought, and some sickness at the stomach; and that as soon as it was day, she found herself entirely blind. This statement she made accurately, and appeared to be perfectly sensible. Her pulse was small and hard, tongue dry and brown, bowels constipated, with a preternatural enlargement of the neck, and unusual obesity. Having been assured by herself and her female friends, that she was in the *eighth* month of gestation, I thought it probable the symptoms arose from a disordered stomach; and in this opinion I was borne out by the appearance of the tongue, a vomiting of dark bilious matter, headache, and, above all, by the entire absence of any parturient symptom whatever. I bled her ad deliquium, taking away about ℥xx, and ordered a brisk cathartic.

"About ten o'clock, I was sent for in great haste, and found the patient in a violent convulsion, which had been immediately preceded by vomiting dark green bilious matter; and was informed, that in a previous convulsion, in my absence, Dr. B. was called in, who bled her largely from the jugular vein. I opened several veins in quick succession, and with difficulty succeeded in checking the convulsion, which was so severe as to threaten immediate dissolution. The quantity of blood drawn could not be ascertained, as much was unavoidably spilt about the bed, nor did I consider it at all material; the object being, without regard to quantity, to produce relaxation, and save the brain from injury. The breathing became stertorous, accompanied by the hissing sound, considered peculiarly characteristic of puerperal convulsions. No doubt any longer existed on my mind, as to the real character of the disease, which was, that labour had commenced in the night, but nature being inefficient, a metastasis had taken place, by sympathy to the head, probably aided by the disordered state of stomach. Under this impression the great object with me, was to relieve the brain, and excite the regular uterine action.

"Alarmed for the safety of my patient, Dr. B. was again called in, to whom I stated my views of the case, in which, however, he did not concur, but expressed the opinion that the patient was not in labour, and that every means should be used to prevent its accession, as he thought it would greatly add to the danger: that the brain and stomach were the

seats of disease, and the apoplectic symptoms required the chief attention.

"Though our views thus differed as to the primary nature of the attack, we coincided in the mode of treatment, which was, to bleed freely, and use the warm bath to any extent which might be indicated; the bath in every instance to be accompanied by cold applications to the head. Notwithstanding the liberal use of these remedies, the convulsions returned, with extreme violence, every three hours; yet, in the intervals, she knew her acquaintances by their voices, and felt, sensibly, every external impression. Under these circumstances, Drs. F. and A. (selected for their experience and high professional reputation) were successively called in, and I have been aided by them, severally or collectively, as convenient to themselves. Both concurred in Dr. B's. views and opinions. But it is remarkable, that although we had directly opposing intentions, as regarded the uterus, there was uncommon concordance in the practice. Four large blisters were applied to the abdomen, back, and legs, having first caused the surfaces to be well rubbed with spirit of turpentine.

"At ten o'clock P. M. vomiting had continued as the immediate precursor of convulsions, which were however less violent. The patient had swallowed nothing for some time, as every attempt at deglutition produced a return of vomiting and convulsion. She appeared now more insensible; her pupils much dilated, and totally insensible to light. The pulse being still strong, the jugular vein was again opened, and the warm bath ordered; to be followed by emollient injections frequently repeated.

"At four o'clock this morning, I was informed there had been no return of convulsion since two o'clock, and then only a slight one. The blisters had drawn well; enemata had operated; the patient now inclined to swallow fluids; tongue foul; pulse still full and hard, with great flushing of the cheeks. Took away more blood; directed the warm bath to be repeated; gave a bolus of grs. xx. of calomel, the operation of which should be quickened by cathartic injections.

"Ten o'clock. Convulsions had not returned. The bolus had produced two large alvine evacuations, dark, and very offensive. The patient had swallowed a little water. The breathing a little stertorous; pulse still large and full. Took away more blood; repeated the bolus; directed the warm bath to be continued, and the blisters dressed with basilicum and spirit of turpentine. Four o'clock P. M. Convulsions

had not returned. The patient now evidently much relieved, breathing easier, swallowing more freely, and by complaining of the bath, showing some returning sensibility. Medicine had produced further evacuations of the same colour and quality. Ordered the same treatment, except the bolus to be continued."

After receiving this full and circumstantial statement from Dr. D. I proceeded to examine the patient, whom I found upon the bed, apparently insensible to every external impression. Her breathing was full and slow; pulse strong, large, and slower than usual in the female; temperature of the surface natural; tongue dry and brown; on raising the lid, the eye was dull, pupil large, and not affected by the light of a candle held very near; sound made no impression on the ear. The attending midwife informed me "that the bowels had lately been freely evacuated, since which the stomach had remained composed. By the touch, she had just discovered the head presented fairly; the mouth of the womb relaxed and a little opened, though as yet she had observed no external symptom of pain or labour."

Recognizing, in this case, the leading pathognomonic symptoms of genuine puerperal convulsion, as detailed by the most approved writers, and confirmed by my own previous experience, I readily coincided with the attending physician; and added the opinion that the convulsions had been continued by the local plethora of the brain and morbid association, or as Dr. Denman expresses it, "the new causes of return, which there is reason to expect they make to themselves when they have once appeared." The indications therefore were still further to relieve the brain, and break this morbid association by establishing the natural expulsive uterine action, which there was reason to believe nature was now attempting. The first would be fulfilled by bleeding till the pulse yielded. For the second I advised the immediate use of ergot, the potent and speedy effect of which upon the gravid uterus, in ordinary labour with deficient action, I had frequently witnessed. Sixteen ounces of blood were drawn from the arm, in a full stream, with the desired effect. When I was preparing the ergot, Dr. D. observed, "the character of the treatment proposed being materially changed, it would be proper and respectful to confer with some of the gentlemen who had been previously consulted." We therefore waited upon Dr. A. (the only one whose residence was convenient) who strongly opposed the prescription, from his persuasion "that the brain was the primary seat of disease, and the con-

vulsions were not necessarily connected with labour; and advised that every effort should be made to prevent its accession, as he thought the irritation thereby excited could not fail to aggravate the convulsions, and render their consequences still more grievous." Having neither experience nor information of the effects of ergot in convulsive cases, I did not feel at liberty to urge its use.

Believing that nature was taking measures to effect delivery in the course of the night, and that this desirable event might be forwarded by such means as experience had found to increase or excite uterine action, it was finally agreed to repeat grs. x. of calomel, administer injections of a strong infusion of salts and senna, apply bottles filled with hot water to the uterine region and lower extremities, guarding the head by local cold; and if the convulsions returned I was at liberty to use the ergot at my own discretion.

Between three and four o'clock in the morning, Dr. D. "found the patient more sensible when spoken to; her head easy; no tendency to spasm: bowels had been well evacuated; labour was rapidly advancing. and in half an hour she was delivered with apparent ease, of a full sized, but dead child. Every appearance being favourable, the patient was left to good and careful nursing."

At two o'clock P. M. after pains had become troublesome, but were soon relieved by an anodyne injection. At four, slight symptoms of stupor appeared, with full, soft pulse, furred tongue, and profuse lochia. Emollient injections soon restored her intellect. The next day she asked for the baby; took some light nourishment, and first perceived the light of day, though still unable to distinguish objects. The bowels were directed to be kept freely opened.

From this time she became gradually convalescent, and in three days could see as well as ever. Some confusion in the head continued through the month, which at the period for the return of the menstrual discharge was increased to partial fatuity; of this, however, she soon recovered.

Although I am confident the ergot would have forwarded the labour, and thereby have saved some hours of anxious suspense, I am pleased it was withheld. The labour would have been attributed to its agency, and the doubts entertained of its original character, would probably have remained. The most respectful deference is due to differences of opinion, when originating in honourable principles, and liberally conducted. But in the present case, the following passages from Denman, "leave not a loop to hang a doubt upon."

"Women sometimes fall into convulsions before there is any discoverable tendency to labour, when there is not the smallest degree of relaxation, or dilatation of the os uteri; and when there is no way of judging that it will be labour, except from the peculiarity of the convulsions, or the manner in which they return. In some cases, after a long continuance of the convulsions, the os uteri has remained closed, and then it has been supposed they were not, properly speaking, puerperal. Yet, after a longer delay, it has happened, that the dilatation of the internal and external parts has begun and proceeded very rapidly; so that, in a short space of time, from no degree of dilatation, the os uteri has become unexpectedly, but completely, dilated, when all hopes of delivery had been laid aside, and the very existence of labour has been denied."

"There are some peculiarities in the symptoms preceding their appearance, and in the convulsions, or the manner of their return, which distinguish them from convulsions proceeding from any other cause. Together with the symptoms of epilepsy, which they very much resemble, there is, not unfrequently, a stertor, which has been considered as peculiar to apoplexy; or the patients, in the interval between the fits, are obstinately comatose. With the foaming at the mouth, there is a hissing noise, produced by fixing the teeth, and by the sudden motion of the under lip, as if attempts were made to retract the saliva back into the mouth; and by this noise I have been able, generally, to discover the state of a patient in convulsions, though she was in another room."

"When patients recover from labours which were accompanied with convulsions, there will often be a vacillation of mind, or symptoms partly delirious, partly maniacal, for several days or weeks, but from these they always recover."

In the female constitution, the uterus is, indubitably, the great source of morbid irritation, and the os tincæ its most irritable part, even in a natural state, but especially when disturbed by any active cause; consequently, the changes which this part undergoes, in the first tendency to labour, often occasion a variety of nervous symptoms, the character and violence of which will be influenced by predisposing causes, and adventitious circumstances. Hence the frequent attack of convulsions at the commencement of labour; hence the greater liability of persons of the sanguineo-nervous temperament to such convulsions; hence their greater frequency in large cities, than in the country; hence, also, their more frequent occurrence in a first, than in any subsequent labour. In these, nature appears not yet to have established the asso-

ciations of actions necessary to effect her purposes, and the os tincæ will sometimes refuse to yield without a struggle.

Bard observes, "that such convulsions as attack at the commencement of labour, when the extremely sensible and irritable os tincæ is first put upon the stretch, have been considered always partaking more or less of hysterical symptoms, and are of the mixed kind, which have been termed epilepsy; and those are generally of the apoplectic kind, which occur in the latter end of labour, after the os tincæ has been fully dilated; or which succeed a laborious birth, in which a strong woman has imprudently exerted herself."

This attempt to characterize convulsions, by the period of attack, is the child of fancy. Theory may foster the bantling, but nature disavows it. It is unnecessary to refer to authors for cases of the apoplectic kind, ushering in the attack, and not unfrequently carrying off the patient, when there was no token of labour, as far as could be judged by the state of the os uteri; they must be familiar to every reader. We are not taught to expect such violence from hysteria or epilepsy. It is readily admitted that women, habitually disposed to either of these, are generally more liable to their attacks during gestation, or labour, than at other periods; but I have never thought they had any peculiar influence on the gravid uterus. I was intimately acquainted with a lady, who was subject to each kind for several years; but who was less frequently and violently affected by either, during two successive gestations and labours. Who has not witnessed the most salutary amendment of constitution, in delicate, nervous females, resulting evidently from the magic influence of pregnancy and lactation? The impolicy of the attempt to classify convulsions by the period of accession is rendered still more manifest, by the fact of their alternating in the same patient in quick succession. I lately attended a servant in this city, who, the day after a natural and easy labour, with her first child, had two convulsions of the apoplectic kind; but it was remarkable, that they were preceded, alternated with, and succeeded by very often repeated hysterical spasms of a violent kind. Their difference, in every particular, was so striking as to be noted by every one who saw them, or could hear her breathing. The treatment was happily adapted to each as occasion required, consisting of two free bleedings, active cathartics, and opiates combined with camphor.

The opinion that puerperal convulsions arise from translation of action from the uterus, sometimes total, at others only partial, seems to be supported by dissections after sudden

death, in which the uterus shows no signs of disease, whilst the heart is found empty and flaccid, the lungs engorged, or the brain exhibiting all the appearances of apoplexy. [Vide Denman, Bard, &c.]

The inferences from these appearances are confirmed by observations upon the living body. "Dr. Clark, of London, thinking it necessary, in a case of convulsions, to turn the child and deliver it, a convulsion occurred while his hand was in the uterus, when, of course, he had an opportunity of judging how it was affected. He remarked, that instead of a regular contraction taking place, the uterus seemed to flutter, or to be irregularly contracted and relaxed again quickly; and he was disposed to believe it was in that state during every convulsion." [Vide Burns.]

Early in the morning I was called to a young and very small girl of Mr. C—., and was informed by the midwife that "labour had commenced the preceding evening, which, after a free bleeding and purgative, progressed regularly but slowly. In the latter part of the night she had a severe convulsion, since which she manifested no sign of pain but remained quite insensible." At this moment the convulsion returned with great violence. Having reason to believe that the child was dead, and, upon examination, finding it a case which justified the use of the crotchet, I sent for Dr. Warrel to assist in the operation. As he entered the room the convulsion recurred with extreme violence. After due examination, he concurred in opinion. During all this time the patient lay in a state of perfect stupor, and could not be aroused; nor was there the slightest sign of pain or uterine action. But so soon as the operation commenced, the uterus began to contract, and the stupor to decline. As the operation progressed the uterine action increased, and the sensibility was so far restored that she made several, though indistinct, answers to questions. The placenta adhered with unusual firmness, and was not detached till the third day. The convulsions never returned, her senses were gradually restored, and she soon recovered. In this case it appears the translation was complete, that the brain was speedily relieved by restoring uterine action, and that mechanical irritation to the body of the uterus, after the os tincæ was fully dilated, had a manifest effect in restoring that action.

The intimate connexion with, and dependence of puerperal convulsions upon, the state and action of the uterus, and that the translation is sometimes only partial, is confirmed by the observations of practical writers, that "when slight, they

can scarcely be distinguished from the pains, and the labour progresses regularly. When more violent, they frequently occur as the first symptoms of labour, and, recurring in paroxysms with the regularity of labour pains, become more and more frequent as they continue, and generally end with the labour." [Vide Spence, and others.] In some few instances they seem to concentrate, in the uterus, the expiring energies of the system, and the birth of the child announces the mother's death.

Why infinite Wisdom has stampt this fearful and wonderful peculiarity upon the sex will probably remain beyond the reach of mortal ken. Whilst the physiologist has laboured to investigate the cause, the physician has been equally zealous to find the remedy. Having traced it to its connexion, *delivery* became the "consummation to be wished." It was therefore advised "in all cases when practicable, to dilate the os uteri and deliver immediately." [Vide London Practice.] But "careful observation proving that the greater part of those thus delivered had died, their death being apparently hastened by the operation, however carefully performed, [Vide Denman,] Dr. Ross of Saint George's Hospital had the courage to declare his doubts of its propriety," and the correctness of this opinion is now generally acknowledged. "In one instance, when the os internum began to dilate, Denman gently assisted in every fit; but being soon convinced that this endeavour brought on, continued, or increased the convulsions, he desisted and left the work to nature; and concluded, as a general rule, 'that women who fall into convulsions in the beginning of labour, ought not then to be delivered by art.'"

Burns "agrees with those who are against forcibly opening the os uteri, but agrees also with those who advise the woman to be delivered as soon as can possibly be done without violence. He was convinced no rule of practice was more plain or beneficial. Delivery did not always save the patient, or prevent the recurrence of the fits; but he thought that it did not follow that it ought not to be adopted.

After much observation, Beaudelocque concludes "that we ought not to be in haste to deliver when nature seems disposed to do it herself, because nature, notwithstanding the disorder of her functions, can perform, in a short time, what we could not obtain but with abundance of efforts. And that we may, in many cases, accuse those practitioners of too much precipitation, who have conducted themselves differently, instead of

giving them credit for the success they flatter themselves they have obtained."

Whilst thus looking to delivery as the most efficient or probable means of a favourable termination, the physician, carefully avoiding timidity or rashness, should assiduously employ all the resources of the profession, to mitigate the effects or prevent the return of convulsion. In violent cases, prompt and decisive measures only can save the patient. Nature seems to be deranged; and her efforts tend to defeat her own purposes. Art is then required to relieve the organ assailed, to remove the causes of irritation, and, recalling nature to her duty, to restore order to the system. The brain is generally the principal sufferer, and claims particular attention. The apoplectic symptoms warn us of immediate danger, and experience proves they are most successfully subdued by the unsparing use of the lancet. The extent to which bleeding should be carried, must be determined solely by the symptoms and the effect produced. The system must be relaxed, and put in a state to admit of speedy delivery. This, sometimes, requires the abstraction of an almost incredible quantity.

Dr. J. Hamilton, of Edinburgh, assures us "when he took away ℥xl. of blood at the first bleeding, and if the fit returned ℥xl. more, he never lost a patient; but when he bled more sparingly he lost several."

Dr. Denman "has found one copious bleeding sometimes remove the convulsions, which have not returned."

The London Practice comprises the whole treatment in this concise sentence, "When there is too great fulness, to bleed, and bleed, and bleed again; take off all stimuli, and purge and bleed."

Free bleeding has been equally necessary and sufficient in our country in the present day. In a case of unusual violence, Dr. Bard "took away nearly two quarts at one bleeding, from the jugular vein, which immediately tranquillized the patient."

Dr. Dewees "has but one rule; bleed as long as the convulsions continue frequent and powerful, and the determination to the head evident." He has, "in more instances than one, taken with the happiest effect an hundred ounces in a few hours."

To produce the most speedy and salutary effect, the blood is advised to be drawn from a large orifice, in a full stream; more seeming to depend upon the sudden abstraction of the requisite quantity, than on the part from which it is taken.

The greater portion of writers, however, recommend the jugular vein to be opened, as detracting more immediately from the brain. But does not the necessary pressure upon these veins (for both must be compressed) produce a regurgitation of blood into the vessels of the brain, already in a state of morbid turgescency, and thereby greatly increase the danger of extravasation? May not this turgescence be lessened, by carefully compressing, with the fingers, the external carotid arteries?

After a sufficient bleeding, cold applications should be made to the head, whilst the feet are immersed in warm water. If used while the blood is flowing, by retarding syncope, an increased quantity must be abstracted.

Free bleeding not only relieves the brain, and lessens the tendency to convulsions, but in an especial manner, as happily taught by Dr. Dewees, renders the os tincæ easily and immediately dilatable.

The influence of the stomach and bowels upon the brain and uterus, is well known, and will require the early attention of the physician. Emetics, cathartics, enemata, sinapisms, blisters, warm baths and fomentations, cold applications to the head, sprinkling cold water in the face, opiates, and the whole class of medicines, usually called nervous, are occasionally indicated. Of these, it is only necessary to observe, that in the hurry and confusion of the moment, they have all, probably, been prescribed, without that correct adaptation to circumstances, which danger ever requires, but oft prevents. Hence, each has been commended or censured, as success or failure has attended its use. Their general effects being understood, the tact of the attendant will be displayed in his selection and application.

Perhaps no remedy has been prescribed, with less attention to the state of the system, than the warm bath. Hence the conflicting opinions of eminent writers upon its effects.

Dr. Denman observes, "there have been instances of women, with convulsions, who were freed from them only during the time they were in the bath; and that he had heard of cases of their being actually delivered in the bath, without any ill consequences to the mother or child."

Dr. Bard says, "the warm bath, always a safe, and frequently an efficacious remedy, should be tried as soon as it can be got ready. The patient will sometimes remain free from convulsions as long as she continues in the bath. Should the fits return, on taking her out, let her be returned to the bath, and delivered in it."

The London Practice says, "it has been directed that the patient be put in a warm bath; but experience contradicts its use. The fits have been found to be more violent in it, and the patient is liable to bruise herself, and be otherwise much injured." A due attention to the principles established in "Currie's reports on the use of water in fevers" and adapting the temperature to each individual patient, would have led to more coincidence of opinion, and uniformity in effect.

In the ergot, nature has furnished a new remedy, which promises the happiest results. Its prompt and certain effect upon the uterus, in labors attended with deficient action, is too well established to require proof at this day; and it is no stretch of credulity to allow its influence upon the same organ, in convulsion cases. After the requisite bleeding, and removal of all impediments to speedy delivery, it promises to arrest convulsions in their forming stage, or to moderate their greatest violence, by breaking the morbid association; to prevent their recurrence, by establishing regular uterine action; to relieve the brain by counter determination, and save many hours of anxious suspense and danger, by expediting delivery. It does not preclude the use of instruments, or other necessary assistance from art; offers no offence to the stomach, and may be safely given as soon as relaxation commences, the expulsive action it excites, being nature's chosen means of effecting dilatation.

Should experience realize these flattering anticipations, its introduction in the treatment of puerperal convulsions will be hailed as a new epoch in their history. That this is not an idle freak of a mind deluded by undue partiality to a favourite article, let the following case decide. About midnight I visited a woman, whose labour, commencing in the morning, had advanced slowly through the day. She had been bled in the forenoon, and again in the evening. Her bowels had been well evacuated by injections, and a dose of castor oil. As night advanced, the pains increased, the os tincæ dilated regularly, and the labour went on so favourably that a speedy termination was expected. But, without any apparent cause, the pains were suddenly changed to a sensation of distressing cramp about the os uteri; slight cramp in the stomach, and great uneasiness of the head. On the accession of these symptoms, the midwife had given thirty drops of laudanum, without affording any relief. These symptoms had continued, with slight increase, for an hour before my arrival. I found the head of the child presenting fairly, the os tincæ dilated fully two inches in diameter, which, on the accession of pain,

was contracted to half an inch. Though dreading convulsions, as the pulse, bowels, and presentation, were in a favourable state, I resolved to try the ergot alone, and immediately gave her 15 grains of the fine powder, in a spoonful of cold water, which was repeated in a few minutes. The effect was prompt, and exceeded my most sanguine expectation. The first pain was attended with less cramp: the second was quite natural, and in less than half an hour, she was safely delivered of a healthy child. Her convalescence was marked by no unusual symptom.

In this case, it appears that the translation was only partial, but the remaining action was misplaced, contracting the circular instead of the longitudinal fibres, and thereby retarding the delivery. We have reason to attribute the restoration of expulsive action, to the peculiar influence of the ergot.

Although puerperal convulsions sometimes attack in the most sudden and unexpected manner, yet the experienced and discerning eye, will generally discover their approach in due time for successful prevention. The most certain premonitory symptoms are, "great swelling or fulness of the neck, with an enlargement of the features of the face, and a staring or protrusion of the eyes; violent pain, or cramp in the stomach, vacillation of mind, or piercing pain in the head; blindness, or imperfect vision, bodies dancing before the eyes, sometimes dark, at others luminous. This state of the eyes denotes fulness of the vessels of the brain more surely than any other symptom, and must never be passed over. These symptoms, separately or collectively, call for the prompt and liberal use of the lancet, which may justly be considered the "sine qua non," of prevention; and, to be successful, must, in some cases, be pushed to an extent bordering on rashness.

A lady, in the higher walks of life, possessing, in an eminent degree, sound sense, discriminating judgment, and a well cultivated understanding; of moderate size. spare habit, and sanguineo-nervous temperament, in the ninth month of her tenth gestation, had complained, all the evening, of colic and headache, which, under the free operation of a dose of castor oil, increased as night advanced. About midnight, I found her with flushed face, and a preternatural fulness of features; complaining of dreadful oppression on the brain, with occasional giddiness; such excessive soreness over the whole abdomen, that the pressure of the bedclothes was distressing, and pains recurring with such regularity and force, as compared with former experience, induced her to believe that

labour was rapidly advancing. Her breathing was laboured, and pulse uncommonly tense. By particular desire, an examination par vaginam was delayed till the arrival of the midwife, who was expected every moment. Dreading convulsions, and subsequent mortification, unless these symptoms could be quickly subdued, or greatly moderated, I resolved to lose no time, but opened a large orifice in the median vein, from which the blood flowed in a full stream. No perceptible change was made in her feelings, or upon the pulse, till fully two quarts were drawn. The pulse suddenly became soft and full, and in an instant, on drawing a full inspiration, she said, "I have not an uneasy sensation about me." The abdomen was fomented with warm laudanum and olive oil. Slept soundly for six hours, was up on the following day, and remained free from any complaint for twenty-two days, when, with less pain and delay than usual, she had a fine and healthy son.

A lady under my immediate care, slightly anasarcous, in the eighth month of her first gestation, was awakened by agonizing headache, slight delirium, nervous twitchings, and declared "she should go into convulsions, or lose her senses, if she was not speedily relieved." The loss of ℥xx. of blood produced immediate relief, and the remainder of the night was passed in tranquillity. This scene was repeated six successive nights, in each of which the loss of from ℥xvj. to ℥xx. of blood, was necessary to produce the desired relief. On the seventh, she was taken, about the usual hour, with regular labour pains, and was soon delivered, without disturbance of the head, or any nervous symptom, although an arm presenting, made it necessary to turn the child.

Mrs. M. (the subject of the first case) became pregnant a second time, and during the whole period of gestation, was troubled with distressing pain, and fulness in the head, with confused vision; but by the free use of the lancet, which was found indispensible, every fourth week, or oftener, with other appropriate treatment, she was safely conducted to a short and easy labour, and mother and child now enjoy good health.

Although the convulsions which make their first appearance after delivery, were not embraced in my original plan, yet they claim a passing paragraph. They are considered, by authors, to be of the same character, and require the same general treatment, as those of earlier origin. My observations, though limited, leading me to consider them as depending on, or connected with, a torpid condition of the uterus, I have, after due depletion, directed my attention

principally to that viscus, and have found the convulsions to moderate, or cease, as its healthy action was restored. I have often remarked, that I never knew an instance in which they commenced, when the "after pains" had been troublesome.

The violence with which they sometimes attack, and the bold treatment necessary to subdue them, are exemplified in the following case. A yellow woman, in this city, of plethoric habit, and rather corpulent, of middle age, and a mother, was seized, about twenty-four hours after an easy and natural labour, with convulsions, recurring with great violence, in quick succesion. I saw her in the fourth, which was of unusual violence, and well marked character. The pulse continuing uncommonly full and strong, three quarts (by measure) of blood were drawn from the arm, in a large stream, at two bleedings, in less than an hour; and ℥x. from the temporal artery, a few hours after. From the first bleeding (of two quarts) the convulsions were successively slighter. In the eighth and last convulsion, the temporal artery was opened. This being an extreme case, general evacuants and local irritants were used with equal boldness and final success. It may be proper to add, that after the first bleeding, I was aided by the counsel and co-operation of two other members of the faculty.

P. S. Since writing the above, I have administered the ergot in three well marked cases of puerperal convulsions. Its effects, in each, was prompt, and perfectly satisfactory.

ART. V. *Case of Gun-shot Wound in the Brain, which recovered in a remarkable manner.* By J. MORRIN.

—— Gingras, aged twenty-one years, the son of a respectable farmer in the parish of St. Nicholas, twelve miles above Quebec, when in the act of discharging his gun, was wounded in the forehead by the breech-pin, which, in consequence of the bursting of the gun, was driven through the inferior portion of the frontal bone, immediately above the nasal process, the injury extending sufficiently on the left side as to include in the fracture the internal angular process as far as the superciliary notch, as well as an anterior portion of the orbitar plate. The young man was stunned and knocked down by

the blow, but soon recovered sufficiently to be able to walk some distance, until the great loss of blood brought on fainting. On being recognized by a neighbour, he was conveyed to his father's residence, where I was called to see him, several hours after the accident.

On examining the wound superficially, nothing could be seen but a considerable division of the integuments, and a little tumefaction. The breech-pin was so deeply plunged into the substance of the brain as not to be seen by the eye, nor felt by the fingers, passed over it. On separating the divided integuments, and looking deeply into the wound, a small piece of iron could be seen, but which was so firmly wedged in the sides of the fractured bone, that it was even impossible to give it the least motion. Part of the substance of the brain itself appeared also on each side of the wound internally; and judging, from this circumstance, that the foreign body had occasioned considerable mischief inside of the skull, I did not proceed to extract it before taking some information as to its shape and size, in order to ascertain how I could bring it out with as little laceration of that important organ as possible, a considerable degree of force being requisite for its removal.

The patient was sensible, but could give no other account of himself than that his gun had burst, and that he thought a piece of wood had penetrated his head.

I bled the patient, and ordered him to town, where, being assisted by Drs. Clark and Hall, the breech-pin was removed by means of a dentist's stump forceps, applied with considerable force. No hemorrhage took place; and, after attentively examining whether there remained any other foreign body, the edges of the wound were brought together with adhesive plaster; cold applications were ordered, and an aperient medicine was administered.

Antiphlogistic diet was ordered. On the rising of the pulse he was bled; and, after taking away a piece of bone from the bottom of the wound, three inches and a half below the surface, the wound being, after its removal, four inches and a half in depth, it granulated rapidly. The patient was rational during the whole cure: the organ of smell was completely lost.* He recovered in twenty-four days after the accident, by the above plan.—*Quebec Med. Journ. No.* 3.

* What will Magendie say to this? Here the loss of smell must have proceeded from the destruction of the olfactory nerves by the pin.—Ed. Rec.

MEDICAL PRIZE ESSAY.

The Committee appointed to examine the Essays presented for the prize, agreeably to a resolution of the Faculty,* report, that they have performed that duty, and do adjudge the prize to the Essay bearing the inscription, "Non in verbis, sed in rebus." The Committee do not pledge themselves for the truth of the many theoretical opinions advanced in the Essay before them; but they beg leave to state, that of the many highly respectable Essays presented, the one selected appears to them to contain the best principles, and most fully discusses the question proposed. The Committee hope, that several of the other Essays which have come under their notice, may appear in some of the periodical journals of the country, as they would confer some distinction upon their authors.

Dr. Samuel A. Cartwright, of Natchez, Mississippi, is the author of the Essay to whom the prize is adjudged.

WILLIAM DONALDSON, M. D.
THOMAS E. BOND, M. D.
NATHANIEL POTTER, M. D.
PATRICK MACAULAY, M. D.

The Committee to whom Dr. Cartwright's Essay was referred, for the purpose of having it printed in the most suitable manner, have acceded to the offer of the Proprietor of the Medical Recorder for its publication in that Journal.

WILLIAM W. HANDY, M. D.
SAMUEL K. JENNINGS, M. D.
JOHN BUCKLER, M. D.

Art. VI. *Pathology and Treatment of Cholera Infantum.* By Samuel A. Cartwright, M. D., of Natchez.

"Non in verbis, sed in rebus."

An analysis of cholera infantum presents us with not less than seven different pathological states of the system. Each of these pathological states, or physiological derangements, has its peculiar symptoms, which, like satellites, revolve around it—varying in their aspect—changing their place—appearing and disappearing at various periods of its progress. These different pathological states of the system in cholera infantum are clearly pointed out, and their existence proved, not only by the symptoms which attend on each, but by the effects produced by remediate agents on the organs, and the relation of these effects to those produced by the same agents in a healthy state of the system, or in different stages of this or other diseases; also, by the order in which the morbid events

* The Medical and Chirurgical Faculty of Maryland.

succeed each other when the disease is left to nature, and their order of succession under various plans of treatment; and, finally, by comparing the phenomena thus collected, with the phenomena afforded by the morbid anatomy of the disease. I propose to describe the symptoms of cholera infantum, from its first apparent onset to its termination; representing it as passing through all its different pathological states, with the symptoms attending on each. This, like all other general descriptions of disease, will be an outline only of its general course. In many cases, the disease does not run through all those pathological states, before it terminates either fatally or in health. In some cases, one or more of those pathological states are entirely absent—not forming a part of the disease. To group together all the symptoms which we have ever seen attend on cholera infantum, without tracing those symptoms to the organs on which they depend, is to create an imaginary disease, a mere metaphysical abstraction, that nature will not own, and that is never met with in practice. To obviate this great difficulty in the description of the present disease, I have been led to enter into an analysis of the various physiological derangements on which the symptoms of the disease depend; and, by so doing, I hope that I shall be able to show nature as she is, not in a garment of my own weaving. Every variety of the disease, as modified by local circumstances, constitution, and remediate agents; and even *every case*, can have its appropriate place assigned it, in this method of description: whereas, without it, many forms and varieties of the disease would have no place allotted to them, and would be entirely excluded, were the disease made to consist in an assemblage of symptoms, collected from a *variety of cases, at various periods of their progress*, regardless of the different pathological states of the system, on each of which a different train of symptoms attends.

These pathological states are,

1. Visceral congestion.
2. Congestion, with an ataxic or broken reaction.
3. Congestion, with a general reaction or fever.
4. Local inflammation, with general reaction or fever.
5. Local inflammation, with an ataxic reaction, or a broken or partial fever.
6. Local inflammation, unattended with reaction.
7. Local inflammation, terminating in effusions, or in structural derangement of some viscus.

The first apparent physiological derangement which manifests itself in cholera infantum, is *Visceral congestion.* (This

congestion I hope hereafter to show, to be an event, in the sequence of morbid events, produced by the remote cause of the disease.)—Symptoms. A bilious diarrhœa is the most prominent symptom of this congestion. So long as the diarrhœa continues *bilious*, there will be few or no other very evident signs of indisposition. The tongue, however, will be found to be white or yellow, the thirst will be increased, and the appetite somewhat impaired. The skin, also, will lose in some measure its wonted whiteness and transparency, together with its pliant and moist feel. Should the bilious diarrhœa be checked by the exhibition of opiates or astringents, or should the remora of the venous abdominal blood be increased from any cause, so far as not to be removed by the secretory process of the liver; but, more especially, if the discharges from the bowels should cease to be of a bilious character, that pathological state of the system will quickly come on, which indeed is the most usual way in which the disease commences, viz.

Congestion, with an ataxic or broken reaction.—This is the second pathological stage. Symptoms. A violent vomiting and purging of vitiated fluids, sometimes mixed with bile, accompanied with more or less fever, of the broken or ataxic kind. The vomiting, in some cases, is absent; in others the vomiting comes on without, in the first instance, any purging. A child in vigorous health is, in some instances, at once seized with vomiting, purging, or both, without having had apparently any previous indisposition. Nothing generally is vomited at first but the *milk*, in a very acid state; afterwards, mucus and slime. If there be any bile discharged, it follows quickly on the evacuation of the milk, then becomes mixed with mucous and slimy materials, and soon ceases entirely. When the disease is ushered in, as it sometimes is, by a purging, the discharges from the bowels are very offensive and vitiated. They consist at first of a light coloured fluid, succeeded, in many cases, by stools of a green or yellow colour, always mixed with a thin slime or mucus. Soon the quantity of green or yellow fluids diminish, and the slimy or mucous discharges increase. These last are very thin and copious; they often contain a white pulpy substance, but no bile, at least scarcely enough to stain the diapers. In those cases wherein the vomiting and the purging come on about the same time, both the one and the other are attended with similar vitiated evacuations, or when either comes on separately. There is often some degree of coldness which attends this stage, especially at its commencement. The extremities

are generally below their usual temperature; the head, breast, and abdomen, have their temperature greatly increased; the cheeks are flushed and the eyes are often red, while the hands and feet are of a pale bluish colour. The pulse at the wrist is small and weak: that of the carotid and temporal arteries full and strong. The determination of blood to the head is evidently greatly increased, while that to the parts more distant from the heart is considerably diminished. The fluids are distributed in an inverse ratio. In violent attacks, spasms of the abdominal muscles and general convulsions are not unfrequent. The great determination of blood to the head often produces delirium, but it is a very different delirium from that which sometimes ensues in the after stages of the disease. The child in this stage is more torpid and listless, more manageable, less sensitive to impressions, and more inclined to stupor or sleep, than in the delirium which may subsequently ensue. This stage of the disease does not continue longer than twenty-four hours, before it gives way to some other pathological state. The state of the system which ensues, depends entirely on the *changes* or alterations which have been produced, either by nature or art, in the system, during the continuance of this ataxic and congestive stage. Health may follow it at once; inflammation with general fever, or inflammation with ataxic fever, may, under bad management, ensue; but, most generally, if bilious evacuations be produced, or if the attack be not very severe, this stage of the disease without the occurrence of bilious evacuations, and even in severe attacks in robust constitutions, passes into the

Third pathological stage. Congestion, with a general fever.—Symptoms. A free and open fever or reaction, diffused throughout the system, with a general increase of the temperature of the surface. The blood is distributed, not in an inverse ratio, as in the preceding stage, but in a direct ratio to every part of the system. The vomiting subsides entirely; the evacuations from the bowels become less frequent. This stage continues not exceeding three or four days. The fever exacerbates every evening. After each exacerbation there is a manifest tendency to a return of healthful excitement. The skin feels less hot and dry; the pulse becomes less quick, and the evacuations from the bowels often assume a bilious character; the thirst abates, and the tongue and mucous membranes become more moist. The system now appears to pause between health on one hand and inflammation on the other. If an equilibrium of action in the skin, kidneys, liver,

and mucous membranes, be kept up for a time, the congestions will be removed, and health will be restored; but, if one or more of the great organs of secretion still continue torpid, or if those organs which have a tendency to secrete, as the skin, kidneys, &c. be prevented from doing so by an *excessive secretion* from the liver, or by a *constant draining* from the bowels, beyond what may have been *sufficient* to remove the congestion of the secreting organ, the equilibrium of action, so far from being restored, will be still further *broken*, and inflammation will in either case ensue. This constitutes the

Fourth pathological state of the system. Inflammation, with a general fever.—Symptoms. Abdomen tense and sore to the touch, flatulency of the stomach and the bowels, wakefulness, restlessness and screaming, accompanied with a hot, dry skin, intense thirst, dry tongue, mucous or slimy discharges from the bowels, attended with griping or pain. Stools, in some cases, are bloody and very thin; in others they are watery and of a dark green colour, or consist of a frothy slime. Much noise from wind sometimes attends their discharge. After much *pressing*, a small discharge only may have taken place, as in dysentery, and then suddenly a considerable quantity will be evacuated. Some children appear to be very much griped, and have (judging from their cryings, stretchings, &c.) very acute pains during dejection; others only moan, and do not appear to be much griped or pained.

When the fever runs high, the little sufferer is often delirious; it often becomes frantic with pain, and will tear itself, and try to bite its nurses. Its eyes look wild, and its whole countenance is expressive of deep anguish. It cannot sleep nor be kept still, but tosses itself from side to side, until it has nearly exhausted its strength. This stage of the disease does not continue long, but it soon passes into the

Fifth stage. Inflammation, with an ataxic fever.—Symptoms. All the above symptoms continue, except the general reaction and general diffusion of heat. Nature appears *too much exhausted* by the excessive discharges from the bowels, and by the local inflammation, to produce any longer a general reaction or fever. The extremities become cold, or at least below their natural temperature; the tongue becomes more dry and coated, or dry, smooth, and polished. As this stage advances, the eyes lose their fierceness and lustre, and become more sunken and hollow; are more closed during sleep, but show the filmy, dull-looking cornea beneath. There is often a *cough* attending on this stage of the disease. The

discharges from the bowels are generally more frequent than in the preceding stage; they frequently amount to fifteen or twenty in twenty-four hours: like the preceding stages, the stools are various in appearance. In this stage, they vary from a white mucus, water, or slime, to a black pitchy looking substance; the latter indicates great danger. Although black, this substance differs very much from *black bilious discharges*, which are always favourable. A substance like rotten eggs is sometimes discharged. When the stools are mixed with much blood, it always indicates danger. In proportion to the draining from the bowels, the child becomes emaciated; the skin also becomes more dry, and looks more and more shrivelled; the *inside of the thighs* are remarkably *shrunk and wasted*, and the skin hangs on the inside of the limb very loosely. The chymefactive process is almost entirely suspended, and the most bland and easily digestible substances afford the sufferer little or no nourishment, but turns sour or putrid, and increases the diarrhœa. Even water itself will often excite a purging. 'Tis in this stage of the disease that the mother walks the room day after day and night after night, holding in her arms her suffering infant, which refuses her fondest and most soothing caresses. The least jar or irregular motion gives it pain; noise and light, once so pleasant to it, cannot now be endured. It will scream on barely being touched by the physician; its pulse can not be felt but by forcibly holding its hand, nor its tongue examined but at the expense of great exertions to resist; such exertions are often the exciting causes of spasms or general convulsions. It often throws its hands to its head, as if the principal pain were there. The *gums are swollen*, black, livid, or inflamed; the lips are ragged, and often have a rim of black sordes about their edges. The duration of this stage depends pretty much on the kind of inflammation which attends it, whether *acute*, *sub-acute*, or *chronic*. If the acute, however, does not quickly prove fatal, in which case the child generally dies convulsed, it passes into an inflammation of the sub-acute or chronic kind, which attends the protracted cases. After weeks of suffering under an ataxic or broken fever, with inflammation sub-acute or chronic, accompanied with great abdominal soreness, tension, pain, tenesmus, and a continual discharge of vitiated stools of various colours and kinds, the disease passes into the

Sixth pathological state. Inflammation, unattended with febrile heat, but with a cold, dry, or damp state of the skin.—**Symptoms.** An apparent remission of the more distressing

symptoms, as pain, griping, &c. The skin feels cool, dry, and harsh; it is often, however, bedewed with a cold, damp, viscid moisture, which sticks to the fingers like honey. Fever, in its etymological sense, is no longer present. The emaciation is nearly as great as it can be. The face has a waxen appearance, and the skin, on the other parts of the body, is shrivelled and loose. The eyes are sunk, languid, and glossy, and give to the emaciated waxen visage a ghastly appearance. The child now only moans, and sighs, and has a disturbed, comatose kind of sleep. Apthæ appear in the mouth, and the extremities sometimes bloat or swell. The inflammation thus continues to run its course, until the bones, in some instances, nearly wear through the skin; and, unless the lost equilibrium is restored, the disease passes into the

Seventh pathological state. Serous effusions within the brain, or structural derangement of some one of the abdominal viscera.—The breathing becomes hurried and laborious, the pulse quick, weak, and irregular, and death closes the scene.

Such is the picture of this formidable disease when it runs its full course. It is, however, variously modified by different medicines and plans of treatment; by local circumstances; by constitution, age, and *by teething*. But in *every* instance, the disease is made up of one or more of the above seven pathological states or elements; and all the varieties and forms of *every case* of the disease, depend on the manner these elements succeed one another, and the order of succession of each element or physiological derangement on the duration, progress, and violence of that which preceded it. Each of these elements or pathological states, having its *peculiar* phenomena attending it, requires its *peculiar* remedies. Although the symptoms, varied by a thousand circumstances, are not always sufficient to point out the *degree* of violence of each separate physiological derangement, yet there is an indescribable something, which the physician cannot know until he sees the patient, which enables him to judge, in some measure, independent of symptoms, of the violence and danger of the case; the kind of physiological derangement; and the degree of its violence. The effects which follow the use of any well known article of the materia medica, as opium, &c., afford also the best of *all tests*, by which the true condition of the system can be detected, and the *kind* and *degree* of any physiological derangement ascertained, which neither the symptoms nor the patient's appearance would at all disclose. The harm which may be done by the use of an improper medicine,

the physician not only knows *how* to remedy, but the effects that improper remedy produces are the beacons that direct him the course to be pursued. Should opium produce pain, wakefulness, &c., the empiric is confused, his faith in medicine is shaken, and his eyes blinded to the situation of the patient; the physician, however, from these effects of opium, judges of the nature of the internal derangements, the plan of treatment that will now best suit the patient's condition, and sees more plainly the probable result of the case. When, therefore, the external pathology or symptoms of a disease, fail to point out the physiological derangement and its degree of violence, there are other means—the effects of remediate agents, by which the latter can be ascertained. Much depends on ascertaining the real condition of the system, before any fixed plan of treatment be adopted. The *treatment*, which experience has proved to be the best suited to the disease, in its different pathological stages, is now to be considered.

First pathological state. Visceral congestion.—Whenever a diarrhœa, a white tongue, dry state of the skin, loss of appetite, or any other symptom, point out the existence of this state of the system, nothing is of greater service than a gentle emetic in the morning, followed by a dose of calomel mixed with a small portion of ipecacuan at night. The emetic not only cleanses the stomach, produces a secretion of bile, removes the plethora of the portal system, and the *congestion* of any *one* or *more* of those *viscera* from which the abdominal vena porta *arises;* but, likewise, determines the fluids to the surface, produces a soft state of the skin, equalizes the circulation, and prevents the subsequent formation of visceral congestions. The calomel and the ipecac., the night after the emetic, still further carries on the work commenced by the latter. Should there still be any tendency to congestion, as manifested by looseness of the bowels, dry skin, wakefulness, &c., a few drops of vinum ipecacuan. through the day, with a little paregoric at night, continued for a few days, will determine to the skin, and, in many cases, render the further use of medicine unnecessary. To assist the vinum ipecac. and paregoric in producing their proper effect, the *warm bath* will be found to be a valuable remedy. Indeed, the warm bath of itself is of the greatest utility in preventing the formation, and even in removing when formed, visceral congestions, by the determination which it produces to the surface. Many children have escaped an attack of an epidemic cholera entirely, by the daily use of the warm bath, and by being dressed

in flannel or cotton. Should the above means not arrest, *at once*, the progress of the disease, it will be necessary to give occasionally a purgative of calomel and ipecac., and, whenever it has operated sufficiently, a little paregoric and vinum ipecac. will readily determine to the skin. Although purging is of the greatest utility, in the forming stage of this disease, it is only so when properly and judiciously managed. For if a purgative be made to *operate excessively*, with the erroneous view "of clearing off all the bile," this *excessive draining* of the system diverts the fluids from the surface to the viscera, and subsequent congestions are formed, which demand still further purging, and are much more difficult of removal than the first. I make it a rule, as soon as a purgative has produced three or four free evacuations, to give a little paregoric combined with some diaphoretic. This moderates the operation of the purgative, and produces a determination to the surface. In bilious fevers, after the liver is unlocked by a purgative, do we not see the heat abate and the skin become soft, or even a sweat take place, which could not before have been produced by sudorifics? If the bowels, however, after these favourable changes occur, are still drained, do we not see the skin become again dry, and a feverish irritation kindled up? The common routine practice, of purging so long as the stools are bilious, regardless of other changes produced on the system—which is now so fashionable, not only in the treatment of cholera infantum, but of many other diseases—stands opposed both to philosophy and the interests of humanity. There is no principle of practice better established in my mind, than the propriety of *ceasing* to purge, when other organs, as the skin, kidneys, and mucous membranes show a disposition to take on a secretory action. These are *proofs* that a balance of action is taking place, which will soon remove the congestion. To push purgatives further than this, would be to destroy that balance, and to create anew more dangerous congestions, or to kindle up some local inflammation. Excessive purging should be carefully guarded against in this stage of cholera, *even bilious purging*. It is true, the liver should be unlocked by purgatives, but then no more fluids, whether bile or not, should be drained away, by exciting this organ into secretion, than what will be sufficient to remove the existing congestions, and thereby to enable other medicines to keep up a determination to the surface. In those cases in which this stage is obstinate, great benefit will be derived from covering the abdomen with batches of carded cotton, and retaining it on by a thin, broad bandage.

drawn moderately tight. The cotton, thus worn, has evidently a tendency to check the diarrhœa, and to prevent the formation of visceral congestions. As children are generally *teething* when attacked with cholera, due attention should be paid to this process in all stages of the complaint. The gums should always be cut, when the growing teeth below render them hard and painful. Although, in this first stage of cholera, there appears to be very little the matter with the patient, yet, as so much depends on the way in which it is treated, the skill and experience of a physician is equally required in this as in any other stage. How often has a single dose of medicine, in this stage of the disease, produced irreparable mischief? It may have been the *right* medicine too, but not *rightly* managed. If a purge, the bile is seen to come away, the symptoms are relieved, and, instead of now desisting from the purgative plan, and of producing a determination to the surface, the purgative, which has been so far beneficial, is repeated again and again, until it produces the very evil it was intended to prevent. As yet, only the congestive stage of the disease has been considered—a stage accompanied with little or no fever. It is now to be considered in its

Second pathological stage. Congestion with an ataxic or broken fever.—A child is frequently attacked by the disease in its present stage, without having manifested any previous symptoms of indisposition. The longer this stage continues, the more severe and dangerous will be the after progress of the disease. There is always much less danger to be apprehended from a general fever, in all acute diseases, than a partial or ataxic reaction. The latter appears to be an effort of the system, *without success*, to remove internal congestions; the former not without *some success*. In this stage of the disease, a mild emetic will do little or no good, even harm. To a child in its second summer, a half a grain of tartar emetic in a small quantity of cold water should be given about every half hour, until the ataxic fever is removed, or bilious secretion takes place. I have often given much more at a time, and have repeated it oftener, with the happiest effects. The tartar emetic generally checks the vomiting—if it does not, a few drops of paregoric, or tinct. opii should be added to each dose. It removes the heat of the head and breast, breaks up the local determinations of blood, restores the loss of balance in the circulation, arouses the torpid organs into action, and produces secretion of the proper kind. Let none fear to use tartar emetic in this stage of the disease, in efficient doses, who are not afraid of using it, in like doses, in a cer-

tain stage of croup. I contend, and experience will bear me out in it, that the system, in this stage of the disease, will bear with impunity more than double the amount of tartar emetic, that would, in the healthy state of the system, be attended with the most alarming and distressing effects. There is no greater source of error in the practice of physic, than that of judging of the proper dose of a remedy in disease, by its effects in health. What will kill a well person, will often cure a sick one. What effects any remedy will produce in any particular state of the system, cannot be known with certainty, from using it in any other state of the system different from that in which its effects have been experienced. Tartar emetic, in the particular state of the system now under consideration, given in efficient doses, is not so liable to produce excessive vomiting, or to run off by the bowels, as when given in very minute or inefficient doses. The latter appears to irritate the existing morbid actions; the former, diminish or suspend them. Should the emetic, however, operate too violently, a little laudanum, or paregoric, in cinnamon tea, will generally be all that is necessary. When the fluid ejected is not bilious, it shows that the remedy has not had its proper effect, if any effect at all. In this case, the warm bath, and sinapisms may be used with advantage; also spirituous fomentations to the abdomen. A little brandy toddy, in mint or cinnamon tea, may at the same time be given. These, or any other means, adapted to the exigency of the case, will quiet the diseased commotions, and prepare the system to be properly acted on by the tartar emetic. This remedy is not to be thrown aside entirely, if the first dose disagrees with the system, and produces unpleasant effects, provided the *ataxic*, or broken fever, *continues*. For the subsequent doses will always agree better, and produce their desired effects. So, calomel will sometimes produce a violent vomiting, but a subsequent dose will produce its usual purgative effect. I once made it a rule to continue the use of tartar emetic, until bilious secretion took place; but experience has convinced me that this rule, though a correct one in the most of cases, is not so in all. A secretion of bile from tartar emetic, like that of saliva from mercury, is *only a sign* that the medicine has wrought a change in the system. As it would be prejudicial to push mercury to salivation in every instance, regardless of other effects it produces, so would it be to push an antimonial emetic to the extent of producing bilious secretion, regardless of other effects it produces. Sometimes it will only remove the ataxic fever, and put a stop to the vomiting

and purging, which attended on it, without producing any *evident secretion.* But in thus breaking up the irregular local determinations of blood, that constitute an ataxic fever, and in checking the *vitiated* and *exhausting secretions* attending on such irregular determinations, it does more than any other known remedy can do: it does not merely confine, like opiates or astringents, these secretions for a time in the bowels, but by equalizing the circulation, removes the cause which produces them. So long, in this stage of the disease, *as the carotid arteries have a strong pulsation*, tartar emetic may be given without the least fear of injuring the patient. This rule I learned from Dr. M'Pheeters, of this place, one of our most judicious practitions. For this strong pulsation of the carotids, with a pulsation in the radial arteries proportionably weak, is the best indication of the presence of the ataxic reaction, which attends on this stage of cholera. After the ataxic reaction has been subdued by tartar emetic, the disease either goes off entirely, or a general arterial reaction is developed. This constitutes the

Third pathological state of the disease. General fever with congestion.—It is a far less dangerous state of the system than the preceding. Excessive exhausting discharges from the stomach and the bowels do not occur in this, as in the ataxic stage. The whole system, under general excitement, appears to bear, in some measure, the *onus* of the disease; but in the ataxic stage, it is borne by the viscera alone, and there produces deranged organic actions, attended with vitiated, and exhausting secretions. When tartar emetic has been used in the ataxic stage, that medicine possesses the power of quickly arresting its progress; and if the disease be not entirely subdued, the present state of the system soon follows. Armstrong has noticed the beneficial effects of tartar emetic, in *bringing on reaction;* and I have experienced these effects of the remedy, not only in this, but in numerous other diseases. In slight attacks of cholera infantum, wherein the energies of the system are not much prostrated, the ataxic stage, even when left to nature, continues but a short time, and the disease, almost at once, passes into the general reacting stage. In some of those cases, in which the disease commenced by diarrhœa, unattended by fever, if the plan of treatment recommended for the congestive stage does not succeed in arresting it, the present state of the system often takes place, without the disease having gone through the preceding ataxic state at all. The treatment of this stage should be somewhat varied, according to the difference in the circumstances attending its

onset. When the present stage has been preceded by an ataxic fever, in which tartar emetic, as above recommended, has been used, all that is necessary will be, to give a mercurial purgative, and use the tepid bath, (I do not mean the warm bath.) As soon as two or three stools, which will always be found to be bilious, have taken place, the heat will abate, and the skin will incline to be moist. These symptoms, manifesting a tendency to a restoration of a due balance of action, should never be lost sight of. For if the purgative be followed up by other purgatives, or if it be permitted to operate excessively, it will undo the very work it has been doing: viz. destroy the equilibrium which it has been instrumental in producing. As soon, then, as these symptoms of a return of a loss of balance occur, as an abatement of the heat, restlessness, &c. on the discharge of bilious matter from the bowels, the purgative action should be suspended, or at least moderated, and the dermoid secernents excited into action by some gentle diaphoretic. Under this plan, the most violent cases of cholera are generally arrested in their progress, and the disease cured entirely within a few days from its first attack. When, however, a general fever, with congestion, succeeds the ataxic stage, in which tartar emetic has not been used, or when the general fever has invaded the system, without having been preceded by that stage, the plan I have found the most beneficial, is to use the tepid bath frequently, and to give about the one-tenth of a grain of tartar emetic, in spir. æth. nitr. every half hour, until the fever has *passed its exacerbation*, and then to administer an antimonial emetic: or rather, to increase the dose of tartar emetic to half a grain. The emetic thus given in the decline of the fever, seldom fails to shorten its course, to lessen the determination to the head, and to produce a secretion of bile. *An excessive discharge of bile by emesis is, however, equally injurious, as by catharsis.* The bilious vomiting should consequently be suspended, as soon as the fever has abated. Green peach tree leaves, beat up, and placed over the stomach and the breast, is a valuable application in putting a stop to bilious vomiting; sulphuric æther is also a good remedy. A small quantity of opium, with some gentle diaphoretic, will answer the double purpose of suspending the vomiting, and of producing a secretory action in the skin. If there be frequent discharges from the bowels, a child, in its second summer, should take about four grains of calomel, one-third grain of opium, and one-third grain of ipecac. mixed, in rose syrup. This dose should be repeated according to circumstances. The above

is not too much calomel to give at a time. Indeed, I seldom give less than from three to five grains to a child ever so young. I have never witnessed half the bad effects from calomel in *large* as in *small* doses. Large doses are not so apt to salivate; they operate with more certainty, and likewise more mildly, and less copiously, than smaller doses. Dr. Walker is in the habit, not of combining calomel with opium to check the operations from the bowels, but of increasing the quantity of calomel. In large doses, calomel excites not only the liver, but other organs, as the skin, kidneys, &c. into action, and consequently its purgative effect is lessened. Calomel, opium, and ipecac. when properly timed and regulated, keeps up regular, yet moderate alvine evacuations of bilious matter, checks the vitiated and exhausting discharges, and determines to the skin and kidneys. Opium should be omitted if the tongue be dry, and its further use should be discontinued if it produces this symptom. When given, however, in this stage of the disease, the tongue being moist, and arterial excitement somewhat moderated, opium, combined as above, is a valuable febrifuge. To remove the visceral congestions by producing bilious secretion, either by emetics or cathartics, which abates also the fever; to prevent subsequent congestions from forming, by keeping up a gentle and equable secretory action in the skin, kidneys, mucous membranes, and liver; and to prevent any exhausting discharge from taking place, which cannot happen to one organ but at the expense of others, are the chief things which should be had in view in the treatment of the stage of the disease just under consideration. The next in order is the

Fourth pathological state. General fever with inflammation. The disease, if properly managed, will seldom run into this stage. It is distinguished from the preceding by the greater degree of pain and restlessness which attend it, by the swelling, tenseness, and soreness of the abdomen, by a wildness of expression, and occasionally by delirium. Blood-letting is here often necessary to quell the arterial commotion. Local is better than general blood-letting. Leeches are well calculated to subdue arterial reaction with the least loss of blood. Why half the quantity of blood taken away by leeches has a better effect in abating arterial reaction, than twice the quantity drawn by the lancet, I do not know; I only know the fact. Sponging with cold water and vinegar, is very serviceable in abating the heat of the surface. The reaction is much more difficult to subdue in *this*, than in the *preceding* stage, and the external application of cold

water, which is here admissible, might, in the preceding stage, have produced mischief. The patient should be indulged in the use of cold drinks, should be exposed to a current of cold air, and should take, every half hour, a few drops of the saturated tincture of digitalis, with half a tea-spoonful of sweet spirits of nitre. This medicine abates the force and frequency of the pulse, and produces an increased secretory action of the kidneys.

An increased *renal* has almost as good an effect in abating febrile excitement, as an increased *hepatic* secretion. During the high arterial excitement in the present stage, purgatives will seldom or ever produce bilious discharges, and emetics are contra-indicated. We have, therefore, to abate the violence of the febrile symptoms *before* recourse be had to purgatives. The above means I think best, but antimonial preparations may be used with great advantage in subduing the excitement of the present stage, if they be combined with some diuretic. When the fever has in some measure abated, a purgative, combined with some diaphoretic, should be given, and *the external application of cold water, and even the admission of cold air should be avoided.* By continuing the cooling plan, after the excitement is somewhat subdued, the skin, instead of taking on a secretory action, becomes *torpid* from too much cold; this necessarily produces a determination to the bowels, and increases the exhausting discharges, and also *prevents* the purgative from producing its proper effect. Calomel is a very good purgative in this state of the system, but I think the extract of white walnut is much better. Dr. Henderson has used, for a great many years, the extract of white walnut, with great success, in the treatment of the cholera of infants. Calomel does very little good, and even harm, if given during too much febrile excitement, especially if the tongue be dry. I have known it in such states of the system, to be determined to the mouth, without, in the smallest degree, arresting the progress of the disease. The extract, on the contrary, possesses, as has been well observed by Dr. M'Pheeters, together with its purgative, a soothing or narcotic property, well adapted to this state of the system. The original employer of this medicine, in the present disease, generally gave it to children by rubbing it with castor oil and the yolk of an egg. It may be very conveniently given in the syrup of roses. It may very advantageously be combined with rhubarb or calomel. It may also be frequently used in conjunction with diaphoretics, astringents, or opiates. When inflammation has once taken place in an organ, it can-

not, like a mere congestion or engorgement, be at once removed, but will, in defiance of medicines, run its course. So long as the inflammation is attended with a general fever, it is far less dangerous than when attended with a partial or broken fever. The physician, in the stage of the disease now under consideration, has to moderate the excessive arterial reaction, to rouse up the torpid organs, as the skin, liver, and kidneys, and to restrain the exhausting discharges from the mucous surface of the alimentary canal. Nature has placed in his hands a variety of means to answer these ends, some of which have been just mentioned. When judiciously restrained and guarded, the inflammation runs its course without producing any lesion or structural derangement. A part of the excessive excitement of the inflamed organ, is thus translated to distant organs, and the one inflamed is better enabled to endure its functional derangement with impunity: Whereas under the violent commotion of great arterial reaction, when suffered to go on uncontrolled, the organs being excited beyond the point of secretion; or when excitement leaves the distant parts and concentrates itself in the part inflamed, the worst consequences are to be apprehended. Hence the necessity of abating the excessive arterial reaction of the general system; of guarding against profuse evacuations, which exhaust the strength, and thereby withdraw excitement from without, and increase that within; and of keeping up a gentle secretory action, and, if possible, an *equable one*, in the skin, liver, kidneys, and mucous membranes. The latter cannot be effected while the heat of the surface is greatly increased by fever, nor if the surface be made torpid and cold by the too long continuance of cold applications; *too much heat or too much cold, being equally incompatible with healthy secretion*, and a restoration of the equilibrium of the system: Nor can it be effected while one organ is permitted to pour forth a superabundance of fluids; for if one organ secretes *more* than its proper amount of fluids, others must secrete *less*, which cannot fail to prevent a balance of action from taking place. When the excitement of an inflamed organ has been lessened by general remedies, the local irritation may be still further removed or translated by epispastics. When properly managed, the disease, even in the present stage, may be prevented from running into the succeeding. But it too often happens that the profuse evacuations produced by nature or art, exhausts the strength of the patient so much, that the system has not *the energies left wherewith* to produce a general reaction. In this event the

general reacting stage never comes on at all, or if it does it continues but a short time, and runs into that stage of the disease which consists of a local visceral inflammation, acute, sub-acute, or chronic, accompanied with a broken or ataxic reaction. This is the

Fifth pathological state of the system. It is easily distinguished from the preceding state, by the shrivelled appearance of the skin, and the coldness of the extremities, when compared to the head, breast, and abdomen. The discharges from the bowels are more copious and frequent in this than in the preceding stage. The present stage often invades the system, in but a short time after the commencement of disease. It is often immediately consequent to the second stage, Congestion with an ataxic fever, when that stage has been improperly treated; or in delicate and weak constitutions, when left to nature. It is, however, most generally, some days before this stage begins. When it is once fairly established it *will run its course,* which is exceedingly painful and tedious. This stage often continues for several weeks, which is a sufficient proof of the innate powers of the infant's system to resist structural derangement. Although the progress of the inflammation cannot be at once arrested, yet medicinal agents are not wholly useless. A variety of causes tending to aggravate the existing inflammation, and to give to it a fatal direction, may be removed. A part of the excessive excitement of the inflamed organ can be translated to the more distant organs, the fluids can be made to flow more equally, the strength can be supported, and the loss of strength produced by the depraved and exhausting discharges, can, in some measure, be avoided. The inflammation may thus be made to run its course, often with safety to the patient, and in less time, generally, than if left to nature entirely. The ancient doctrine of concoction, is not without its foundation in nature. The ancients seeing that certain affections continued generally for a definite time, and then terminated fatally, or by some evident critical secretion, terminated in health; not knowing that those critical secretions were only an evidence that a due balance of action was again taking place in the system, concluded that in these secretions, some morbific matter was thrown off from the system, which the vis medicatrix had digested and prepared for that purpose. Officious and untimely interference aggravated then, as now, any fixed inflammation. This was supposed to be owing to the interruption which nature received in her work of concocting morbific matter. Timely and judicious

means, by shortening the progress of a disease, and by rendering it less fatal, was supposed to be owing to the assistance art afforded nature in expediting the concoction of morbific matter, and of freeing the system of it. Although the theories of the ancients be erroneous, we should not lose sight *of the facts* on which they were founded. If certain means resorted to, in any particular state of the system, were found, by their experience, to be injurious, the same will be found to be equally injurious in modern times, under the same circumstances. Though we do not fear to interrupt an imaginary morbific concoction, we *should fear* to interrupt those series of pathological changes, which it is all important, in certain states of the system, should take place before the disease can be safely conducted to a termination. Instead of giving medicines to assist nature in her supposed concoction of morbific matter, we have now to watch the pathological changes which are taking place in the system, to guard against the occurrence of those morbid events that lead to a fixed inflammation, and should that happen, to withdraw, as far as possible, all those sources of irritation, that may tend to produce structural derangement.

With these preliminary observations I come now to consider the outline of the course of treatment, which experience has pointed out, as being the best suited to the present pathological state of cholera infantum. It can only be an outline, for this is a morbid state of the system for which there is no nostrum; no one medicine which will always cure it; no particular plan of treatment can suit all cases, and none can at once arrest its progress. The most skilful physician has to watch it patiently, and watch it attentively, if he wishes to succeed in curing it, and to adapt his remedies according to the circumstances attending on each case. The exhausting discharges from the bowels should generally claim his first attention. I must here recommend a practice which I learned several years since from Dr. Henderson, who treated with unparalled success this disease, and whose valuable improvements, not only in this, but in some other diseases, except what he orally communicated to his acquaintances, was lost to the medical world when he descended to the tomb. To check the excessive discharges of the bowels, in this stage of the disease, the physician above mentioned, who had been a close observer of the disease for more than twenty years, learned me the value of a combination of the extract of white walnut, sugar of lead, and opium, or the extract of belladonna. A little of the extract of white walnut, with about the one-

fifth of a grain of sugar of lead, and a very minute portion of opium, given every three or four hours, will, in the most of cases, check the watery and debilitating discharges, and substitute in their stead, less vitiated secretions, which are neither so frequent nor so copious, as the former discharges, and which furthermore do not debilitate the patient. This combination I think far preferable to calomel and opium, which, however, is here a good combination, if the tongue be not dry, red, or parched. Should the opium increase the restlessness and pain, the belladonna will often be found to produce quietness and sleep. If there be great determination to the head, with a strong pulsation of the carotid arteries, instead of the above medicines, tartar emetic in doses of one-fourth of a grain, for a child one year old, with one or two drops of laudanum, may be given every two hours. This medicine abates the ataxic fever, produces no vomiting, fills the cutaneous veins with blood, and checks, in a considerable degree, the watery and exhausting discharges. It will also prepare the system to be properly acted on by the above mentioned medicines, which should not be given when the reaction, although ataxic, is strong. When the pulsation in the carotid is *quick* and *weak*, the abdomen tense, sore, and swollen, I know of no medicine more certain, safe, or efficacious, in restraining the exhausting discharges, and producing a better state of the bowels, than the purified spirits of turpentine. The croton oil is also exceedingly useful in similar states of the system. Either of these medicines will be found to check, in the most of cases, the watery purging, to cleanse the primæ viæ of their foul contents, to diminish the pain, soreness, and tension of the abdomen, and to strengthen the patient. It seems as if nature has intended these remedies to be used as a purgative in those debilitated states of the system accompanied with pain, swelling, and tension of the abdomen, wherein all other purgatives but these, do harm. In *similar states* of the system in puerperal fever, the spirits of turpentine, though long opposed by the dogmas of the schools, has acquired a high reputation. There are some practitioners who condemn the use of all those remedies in the diseases of children, to which they have prefixed the epithet, "harsh." The ol. terebinth. and ol. crot. tig. are among the condemned number. Yet let any of the mild purgatives, as castor oil, &c. be used in the state of the system in which I have recommended the turpentine or croton oil, and what will be their effects? Castor oil, or any such purgative, if given in this state of the system, *not being capable of pre-*

ducing any change on the existing morbid actions, nor having the capacity of exciting the liver into a secretion of bile, increases the watery and vitiated discharges, and debilitates the patient. The terms "mild, and harsh," when applied to medicines are but *relative*. Castor oil in the present state of the system is a harsh and dangerous remedy, because it produces exhausting discharges; whereas the ol. terebinth. or ol. crot. tig. is mild and gentle, because it adds strength to the patient, relieves the pain, abates the swelling &c.

The usual dose of croton oil for a child a year old is about one-third of a drop in syrup of roses. A great variety of cretaceous juleps and astringent mixtures have been recommended to restrain the exhausting diarrhœa, which attends on this state. But these afford, if any, only a temporary relief; for when the diarrhœa is thus checked, it often returns in a few hours, with increased violence. The sugar of lead combined with the extract of white walnut, with calomel, with opium, or belladonna; calomel with opium or with the pulvis ip. comp.; tartar emetic with laudanum; the spirits of turpentine or croton oil with or without the addition of a little laudanum, will be found to possess the power, when properly managed, of restraining the exhausting discharges from the alimentary canal and of producing other discharges, which will be less frequent, less copious, and not debilitating. Let us now suppose that we have checked or considerably diminished the exhausting diarrhœa of this stage, by the above, or any other means. It is evident that the inflammation continues *too long* to admit of any of these medicines to be constantly used, without doing irreparable mischief to the system, and it is in vain to expect to cut short the inflammation at once. When then, these remedies have fulfilled the indication of restraining the exhausting diarrhœa, they should be laid aside, at least until this symptom should again be troublesome, and the peruvian bark or colombo should be freely used. When the patient cannot be got to take a sufficient quantity, injections composed of bark should be frequently given. The bark should be combined with aromatics, as cloves, ginger, cinnamon, &c. if it puke; and with astringents, if it purge. The bark the first few days *evidently increases the febrile heat, adds to the distress of the patient and apparently aggravates the violence of the symptoms.* Dr. Henderson, the author of this practice, assured me, that he was "always pleased to see the bark *bring out the fever*, because he could then manage the disease as he pleased." There is nothing more certain, than that after a general ex-

citement has been produced by the use of the bark, purgatives will always have *a better effect* in producing bilious secretion, than if the bark had been *omitted.* The best general rule is, to give the bark freely through the day, and to administer a purgative at night. The purgative, by producing bilious secretion, will soon remove the fever brought out by the bark, and the patient, after those bilious stools, will enjoy an undisturbed and refreshing sleep through the night. Bilious evacuations will never weaken the patient provided they be checked as soon as an abatement of heat and other symptoms indicate a tendency to a return of a due balance of action in the system; this can readily be done by the use of a little laudanum combined with a diaphoretic. It is a great source of error to judge of a medicine by the *immediate effect* which it produces, without paying any regard to its more *remote* effects. Given during the ataxic fever of the present stage of cholera, the bark, it is true, increases the fever; but then it produces *reaction* in parts before *torpid*, it fills the shrivelled skin with blood, it takes off a part (if I may so express myself) of the visceral excitement and throws it on the more distant and torpid organs. It thus *prepares* the system to be properly acted on by other remedies. For the circulation being in some measure equalized, by the general reaction produced by the bark, a purgative, which *before* would only have added to the distress of the patient, and would have increased the watery purging, *now* produces a secretion of bile. The dermoid capillaries being once more *filled with blood*, by the reaction produced by the bark, the skin, before dry, loose, and torpid from *paucity* of fluids (for *too small* an amount of fluids in a part will suspend or prevent a secretory action equally with *too great* an amount) has its action in some measure restored, and the fluids are not now, as before, almost entirely determined to the inflamed organ. That the bark should never be given during fever, that it always does harm when it increases the fever, and that it is always inadmissible in local inflammations, are dogmas which are daily contradicted by experience. The bark on being continued for a few days, ceases to produce so great a degree of febrile excitement as when first used; but appears to *equalize* the circulation more and more, and to cause every part of the system to bear its part of the disease. Whenever the febrile symptoms produced by the bark run high, they should be moderated by a purgative; for a general febrile excitement, if violent, will aggravate a local inflammation, *but not so much*, however, as a violent excitement hemmed in about the

inflamed organ. The bark is the only medicine I have mentioned which is difficult to be given to children. Happily, however, the sulphate of quinine answers as good, if *not a better purpose* than the bark, as far as my experience with the remedy extends. The sulphate of quinine should be made into a soft mass with wine or brandy, and taken up on the handle of a teaspoon, previously dipped in syrup, which is to be introduced into the child's mouth, far back, near the root of the tongue; a little drink of some kind should be given to wash it down. A child in its second summer should take from one-fourth to one-half grain every two or three hours. This is not too much when the medicine is given *during the presence of the ataxic fever* which attends on this stage of the disease. A *smaller* quantity would be sufficient, were it given in the *apyrexial* period of a disease to prevent a return of fever. Dr. Perine is in the habit of giving to an adult, in irregular forms of fevers, in which purgatives will *not* produce bilious secretion, from six to twelve grains of the sulphate of quinine every three or four hours through the day. He gives the medicine during the fever. On looking over the cases reported by him, I found that the quinine, either removed the fever at once by producing a sweat, or brought out the excitement and prepared the system for the removal of the fever by purgatives. Dr. Henderson, however, several years ago, first called my attention to the good effects of large doses of bark given during the ataxic fever, which attends on this stage of cholera. He sometimes gave the bark in combination with *calcined magnesia*, when there was much acidity of the stomach. The practice best suited to conduct to a favourable result the inflammation attending on this stage of the disease, is that of restraining the vitiated and debilitating discharges from the bowels by some of the remedies above mentioned; or by injections of starch gruel, and a little laudanum, if the rectum be the seat of much irritation; to administer the bark or sulphate of quinine freely, so as to diffuse the excitement throughout the system; to moderate that excitement by purgatives; to prevent the purgatives from operating more than what would be *compatible* with a due equilibrium in the circulating system; to throw excitement, as much as possible, on the skin; and to moderate that of the internal organs. This practice will in due time conduct the inflammation to a happy termination. The treatment of the

Sixth pathological state—Inflammation unaccompanied with fever—is now to be considered. As the strength here is very much exhausted, and the alvine discharges frequent, copious, and watery, the super-sulphas aluminæ

with nutmeg, armenian bole, and a little opium, is the best preparation to restrain the diarrhœa; and, whenever it is necessary to operate on the bowels, a little calcined magnesia should be given, if there be much acidity, and charcoal, if there be much *pain* and *tenesmus* of the bowels; a cold infusion of rhubarb, if the stomach and bowels have lost their tone, and permit the food to pass through them unchanged; and, lastly, the spirits of turpentine or croton oil, if the abdomen be much swelled and very painful. The strength should be supported by preparations of ammonia or bark. The latter medicine should be given *in much smaller doses* in *this* than in the *preceding* stage. It is here given only *to support* the strength until the inflammation shall have run its course. There is not sufficient strength and *energy* in the system, *to enable the bark to divide or translate the excitement of the organs inflamed, by producing general reaction, as in the preceding stage.* Astringent and stimulating juleps are of more service in this, than in any other stage of the disease. The opium which it is necessary to resort to, in this stage of the disease, in combination with super-sulphas aluminæ, kino, logwood, &c., or any other remedy, should always be given in exceedingly *minute doses*, in consequence, not only of the encephalic disturbance, but in consequence of the peculiar state of the system, in this stage, rendering it unable to bear so much of this medicine as in any of the preceding stages; besides, a very *minute* portion has a better effect in restraining the diarrhœa than a *larger* quantity. Horse mint tea, cinnamon, dewberry root tea, combined with astringents, with or without a little opium, will be found to moderate the vitiated alvine discharges. Dr. Burgon, of Pennsylvania, recommends very highly, in doses of six or eight grains, twice a day, the asclepias tuberosa, which, he says, is both a gentle purgative and diaphoretic. I have not made trial of this medicine, but I think that if these be its effects, it would be a good remedy in the present stage of the disease. Dr. Shuman, of Hagerstown, is said to have used a decoction of it with great success. Rhubarb and magnesia are both valuable medicines in regulating the state of the bowels, in this stage of the disease. The former possesses not only an apperient, but a tonic property. Much good may be done, in this stage of the disease, by external applications. The skin should be bathed in hot brandy, containing a few pods of red pepper; or rubbed over with equal parts of oil of amber and aqua ammoni. Mucilaginous drinks are very serviceable, not only in this, but in every stage of the disease. Of these, the best is a tea made by pouring a pint of boiling water on

two or three leaves or pods of the *prickly pear*. The eyes, or little bunches of prickles, should be cut out and the pear sliced up, before the water is poured on it. This tea is much *more pleasant* than the elm, more mucilaginous, more nutritious, and possesses considerable diuretic properties. I have cured several cases of gonorrhœa by this medicine alone, which is a sufficient proof of its beneficial effects in inflammations of the mucous membranes. Vegetable jellies, arrow root, sago, tapioca, wine whey, &c. should be given in small quantities, and repeated frequently. These may be used in every stage of the disease, but more freely in this. The stomach, however, should not be too much burdened with any article of diet. *To overload* the stomach is sure to *aggravate* the diarrhœa. After all, if the child be not weaned, its mother's milk, if she be healthy, will be found to be the best diet. The apthæ which appear in the mouth in this, and sometimes in the preceding stage, should be treated by their appropriate local applications, as gargles made of an infusion of red roses and borax, &c. &c.

By restraining the exhausting diarrhœa by various astringents; supporting the strength by tonics and stimulants; removing acidity by magnesia; relieving the griping and tenesmus by *charcoal*; the pain and abdominal swelling by turpentine or croton oil; strengthening the digestive powers by a cold infusion of rhubarb or colombo; stimulating the skin by rubefacients; nourishing the patient by the most bland articles of diet; sheathing the mucous coat of the stomach and bowels, and gently exciting the *renal* secretion, by an infusion of the prickly pear; and, by waiting patiently for the inflammation, whether acute, sub-acute, or chronic, to run its course, some of the most hopeless cases, in which the feet are œdematous, the skin livid, and the emaciation great in the extreme, may sometimes be conducted to a favourable termination. Exercise in a carriage, in the open air, but particularly a removal to the country, is of the greatest service in every stage of the disease, and sometimes absolutely indispensable for the recovery of the patient, in the present stage. Should the inflammation of the present stage not be attentively watched, and guarded at every point; or should any measures be taken to cut it short at once, the disease will soon pass into the

Seventh stage: viz. effusions will take place in the ventricles of the brain, or structural derangement will be produced in some of the abdominal viscera. For this stage I know of no remedy.

(*To be continued.*)

REVIEWS.

Quidquid venerit obviam, loquamur
Morosa sine cogitatione.—*Martial.*

Philadelphia, May 6, 1820.

Sir—At your request I have reviewed the work by Mr. White, which the publisher of the Medical Recorder lent me; you may think that I have taken too much pains to refute an hypothesis, which, I apprehend, will find few advocates; but it is proper to endeavour to expose fully, an error capable of producing much practical evil.

I am, very respectfully,
JAMES MEASE.

Dr. Colhoun,
Editor of the Medical Recorder.

ART. VII. *Doubts of Hydrophobia, as a specific disease, to be communicated by the bite of a dog, &c.* By Robert White, Surgeon, Brighton. London, Knight and Lacey, 1826, pp. 146.

It is a very true remark of the author of this work, that "no disease has, perhaps, occupied a greater share of public attention, than that which forms the subject" of his book. The interest excited by the disease, doubtless, proceeded from the singular symptoms by which it was marked, and from its untractable nature, until a recent date. It placed the most learned teacher, and the medical tyro, upon the same footing; for both were alike unable to account for, or to remove the phenomena exhibited by it. Successive ages, and every country, witnessed a great variety of internal remedies, all of which, after enjoying temporary reputation for infallibility, have been found to be entirely inefficacious, and even unable to alleviate a single symptom. The mere catalogue of these remedies would fill a page. The universal opinion of the medical community has hitherto been, that the disease was produced by a poison existing in the saliva of an animal of

the genera *Canis* and *Felis*, and was communicated to men or brutes, by means of a bite from some quadruped affected with the disease; but Mr. White thinks that physicians have hitherto been in error on the subject, and denies that "a bite from a dog under any circumstances, can infuse a specific poison into the human system." The moving cause for Mr. White's labours, appears to be, the circumstance of the town of Brighton having often been kept in "a ferment of apprehension," respecting the prevalence of madness among dogs, although not a solitary instance could be adduced in which any human creature had been subjected to the consequences from the reported bites. Numberless families thereby, have been prevented from residing in the town, to the great pecuniary injury of the settled inhabitants.* Mr. White has therefore, kindly undertaken to prove to the former visitants of the town, and to the public at large, that their fears are groundless, not only as to the prevalence of the disease, of which they are in such dread, but as to the possibility of their being affected by any disease, even should they happen to be bitten.

Mr. White ascribes to the imagination solely, the effects which have hitherto been supposed to proceed from the virus, and thinks that he derives strong support to this notion, from the fact of serious indispositions, and even death having resulted from mental impressions; "from the discrepancies that happen in the relation of cases of the disease" in question; the little analogy the effects of it bear to those of any other known specific virus; the denominative symptom of the complaint, viz., the dread of water, being not uncommonly absent; the occurrence of that symptom from other causes; the want of any direct proof by experiment, that a poison, produced either by the corruption of the fluids, or secretions of dogs termed rabid, really exists; and the different periods at which the symptoms have appeared, after "the supposed infusion of its cause." I shall answer Mr. White's arguments in order.

1. It is conceded, that affections of the mind have produced very alarming diseases, and that even symptoms similar to those resulting from the genuine operation of the canine virus, have been occasioned by the mere apprehension of that virus taking effect, after the reception of a bite from a dog,

* The American reader should be informed, that Brighton has long been a fashionable place for sea-bathing, and for summer's resort. It was the favourite residence of the present king of England, when prince of Wales. The newspapers now inform us that it is nearly deserted. The truth is, the nobles and gentry are no longer drawn thither by the presence of royalty.

supposed to be mad. It will be further granted, that many of the cases on record, and which are said to have been cured, are to be referred to the operation of settled fear, or sudden and violent affections of the mind, and not to the virus;* nevertheless, to deny that the saliva of a dog labouring under a certain indisposition, can communicate a mortal disease to another animal, is to doubt the evidence of our senses, and to shut our eyes to plain every-day facts.

2. The "discrepancies," in the symptoms of the disease in question, are not greater than in many other diseases,† or even in those resulting from specific poisons.

It will be sufficient to refer to gout and syphilis, as cases in point. How diversified and numerous are the symptoms of those diseases! In the hydrophobia, the prominent characteristic symptoms are so permanent, that no one who has witnessed the horrors of one case, can mistake it, when called to another. Mr. White could not have seen the disease, or he would not have hazarded the assertion he has advanced.

3. The want of analogy in the operation of the canine virus, with other poisons, is a very weak argument against its existence. The same argument would apply to prove the non-existence of the poison in some snakes, because the effects of it are so different from those of syphilis, cow-pox, yaws, &c. &c. All poisons have peculiar effects, and modes of propagation.

4. The occasional absence of the "denominative" symptom cannot be considered as of any weight: for although sufferers in this disease, do sometimes, though rarely, drink, yet the dread of fluids is so general an accompaniment, as to authorize the name which has been given to the disease. It is, to use the words of Hildanus, "*præcipuum et verissimum symptoma*

* See a case in the *Giornale di Fisica*, of Italy, for the year 1817, for the fact first mentioned above. The case of Lindsay, related by Dr. Bardsley, and commented upon by Mr. White, to prove that it did not originate from a bite, received twelve years before the disease appeared, was not ascribed to that cause, as insinuated by Mr. White, but to distress of mind and corporeal disease. Several more are mentioned in my inaugural dissertation on the disease under consideration. Should Mr. White wish to consult it, he may probably find it in London, having been republished by C. Dilly, in 1793.

† Dr. Timone has long since informed us, that "there are various symptoms in the plague, and diametrically opposite to one another,"* a fact, which is confirmed by the late intrepid Dr. Valli, who describes the disease "as so proteiform, that he cannot assign to it a diagnostic character—counterfeiting all distempers." *Sulla Peste* del 1803, p. 115.

* Lowthorp's abridgt. Philos. Trans. vol. VII. part III. p. 161.

morsus rabidi." I once thought differently, but I am now satisfied, that I judged too hastily from the facts I quoted in support of my opinion. If Mr. White will read Dr. Bardsley's "Medical Reports,"* he also, may probably be induced to change his sentiments.

5. The fact of the occurrence of the "dread of water," in other diseases, being used on the present occasion, is proof that Mr. White takes it for granted, that the mere circumstance of a dread of water constitutes the whole disease, whereas it is only a symptom, the result of a morbid state of the throat, fauces, œsophagus, and stomach, induced by the action of the virus upon those parts. Having adverted to this subject thirty-four years since, to my own satisfaction, and to that of others, in order to show the difference between the symptomatic affection, and the genuine disease, and pointed out the impropriety of confounding them, I cannot enlarge upon it at present. I will just remark, that other symptoms, viz. the indescribable appearance of the features during a paroxysm, the difficulty of respiration, the excitable state of the system, and of the mind; the sensibility of the surface to cold air, the sighing, the irregular action of the muscles of the throat, and the distressing affection of the præcordia, &c. &c. are equally, if not more constantly attendants than the one which has given name to the disease. The "denominative symptom" has also been noticed in affections of the brain, in malignant fevers, in hysteric, and other nervous affections, in inflammation of the stomach, whether the result of the operation of general febrile causes, or a particular article of food, as beech-nuts :† but it is very weak reasoning, and very unphilosophical, to conclude from the occurrence of this circumstance, that the canine virus has no agency, in the production of a state of the system, upon which the symptom depends in the real disease. That more than one cause should be adequate to the bringing about the same morbid sensibility in the nerves of the fauces, œsophagus, and stomach, only shows that different agents can produce the same effects, a circumstance often observed in disease, and the natural world.

6. There is no necessity for making a direct experiment to prove the existence of poison in the fluids, or secretions of

* London, 1807.

† As Mr. White more than once refers to this case, and he appears never to have read the paper, I can refer him to it. If he consults it, he will find that, besides the aversion to water, the patient was also affected with fever, delirium, and spasmodic affections. See Med. Musuem, Lond. vol. I. p. 98.

rabid dogs, because the fact is made evident by the experience of every year, in the human race, and in brutes, by the disease being communicated by bites given by dogs. Mr. White mentions that he had failed to infect rabbits, cats, and other animals, by inoculating them with the saliva of two dogs presumed to be mad, and had even made the experiment upon himself. The late John Hunter, he says, was equally unsuccessful. Of the experiments of the latter I have never before heard; but granting that he had actually failed, and that there was no fallacy in those by Mr. White himself, still the conclusion cannot be deemed favourable to his hypothesis; for we know that few persons take the disease, compared with those who are bitten, and that some animals are insensible to the stimulus of that, and of other poisons. Thus Mr. Hunter relates that he could not infect dogs or asses with syphilis, after repeated trials, and we also know that many persons resist an attack of the same disease. Every practitioner who has had much experience in syphilis, must be familiar with the fact of one man remaining free from taint, after an impure connexion with a female, who had diseased a dozen other persons. Some have never had the small pox, although repeatedly inoculated, and exposed to the disease by nursing those ill with it. A similar fortunate insensibility to the plague, or to yellow fever, is often observed during the prevalence of those epidemics. The cause of this exemption we pretend not to give. We may, indeed, ascribe it to the different susceptibilities of different constitutions; but still the mystery is, on what does these varying susceptibilities depend? Here we must plead ignorance: nevertheless, because we are incapable of diving into the secret operations of nature, we cannot doubt the existence of the poisons of syphilis, or small-pox; and in like manner it is deemed equally absurd, to deny the existence of the canine virus, because a few experiments have failed to communicate it, or because one only of many who are bitten by mad dogs, takes the disease.

7. The irregularity in the appearance of the symptoms in different persons, after being bitten, is a very weak argument in support of the author's theory. Our inability to account for this irregularity only shows that our knowledge on this head is yet imperfect, but it cannot be used to prove that no disease is caused by the canine virus. Other diseases, the result of animal poisons, observe very irregular periods, though not to the extent of the canine virus. Thus the small pox infection appears commonly in three days after its insertion, and yet twenty days have often elapsed before the local inflam-

mation in the inoculated part has taken place; the infection of blennorrhagia, has taken effect in twenty-four hours, and been delayed for two or three weeks, and even four months;* that of chancre has appeared in a few days, (less than a week) and in other cases, not until more than a month after an impure connexion; and confirmed syphilis, or the secondary symptoms, have become manifest in all the intermediate periods of from two or three months, to six years,† after the absorption of the virus in the system. Now it is only to refer the greater interval between the insertion of the canine virus and its operation, to an extension of the same causes, whatever they may be, that occasion the delay in the appearance of the diseases above mentioned, to account for the length of time that the canine virus lies inactive in the system, and the difficulty is solved. Mr. White will deny the force of the facts I have stated, for he considers it, p. 104, as "a direct impossibility, according to the known laws of the constitution, that *a poison of any kind*, and however introduced into the human body, can lie inert for a period of eleven weeks." It is fortunate, however, that his own belief, or individual opinion, cannot do away the authority of undeniable facts, although we cannot account for them. Difference of constitutional excitability, effects of a change of air, affections of the mind, temporary habit of body, and difference of climate, and of acrimony in the poison, may account for some of the foregoing facts: to these may be added, in the case of some poisons, the stage at which they are inserted in the system, but this will not apply in the instance of the canine virus, for numerous facts go to prove, that dogs infect as certainly in the first day's indisposition, or even before they are suspected of madness, as in the latter stage of the disease.

The difference in the virulence of a poison is proved by the following fact. Medical practitioners, and other persons, from Hayti, and the French West Islands generally, have informed me, that whether the disease in those islands, from the syphilitic virus, appear in the form of blennorrhagia, or of chancre, the symptoms are extremely violent, and difficult of cure;‡ whereas, in England and the United States, making allowance for the difference of constitutions of patients, the venereal disease, if not neglected, is by no means virulent. Nor can the malig-

* See Swediaur on the Venereal, vol. I. p. 10. Lond. 1819. The last case was communicated to him by Dr. A. Duncan, of Edinburgh. The young man was on a voyage to India, when the infection appeared.

† Mem. Med. Soc. of Lond. vol. I. p. 357.

‡ I know that this opinion is opposed to the Hunterian theory:—all I can say, is—*relata refero.*

nancy of the virus, in the French islands, be ascribed to climate, because we know that in warm climates the disease generally appears in a mild form, and hence in some parts of South America, it is so little attended to, that it is there very common in families, and that men often prefer to keep it down, by simple vegetable remedies, rather than to have it thoroughly cured by a course of mercury; and yet they reach the usual extent of human existence.

The well known strongly characterized disease, will continue to be communicated by the bite of a rabid animal, notwithstanding the irregularity in the intervals between the infliction of a wound and the appearance of it, and although so few do actually take it, after being bitten.

In consistency with his doctrine respecting the innocency of the saliva of a mad dog, Mr. White offers to "disprove the communicable properties of the poison," by submitting to inoculation with it, whenever a committee of the Royal College of Physicians or Surgeons shall be appointed to perform the experiment. If Mr. White be a single man, or if he be married, but without children, and his lady agree to the trial, it ought to be made. Probably, however, it may be well enough to wait the result of the three bites he says he received from a mad slut on the 24th May, 1825, and for which he did nothing. He may have occasion to regret the rash experiment upon himself, and his inattention to precautionary measures, because the period has not yet passed, at which he may be supposed to be safe. The longest reported interval, (to which we can attach any credit) between a bite and the attack of the disease, under favour of Mr. White, is three years and four months,* and until that time shall have elapsed, he cannot be pronounced to be secure from all apprehension of evil. At or before that time, he may experience the same result that followed the experiments of the late Dr. Valli upon himself, with the poison of yellow fever.†

* See in Med. Repos. New York, vol 5. p. 298, my letter to the late Dr. Miller. The bite was by a cat; the subject, a boy of 14 years of age, who lived within a few miles of Philadelphia. The bite was given on the 14th July, 1797, and the disease came on the 19th Nov. 1800, and terminated in death.

† This bold physician went to Constantinople, to examine the nature of the plague, and after recovering from that disease, and making numerous experiments with the pus of carbuncles, the bile of plaguy subjects, inoculating simultaneously the plague and small-pox, and pestilential matter mixed with gastric juice, hiring persons to be inoculated with the plague, and finally leaving the subject involved in as much obscurity as before, without discovering any useful practical facts; he came to the United States in the

If the imagination, or affections of the mind, were the sole cause of the disease, how will Mr. White account for the appearance of it in persons, who, from their extreme youth, could not be aware of the source of their sufferings, and consequently, must have been uninfluenced by the imagination; or for others being attacked, who had been known to be bitten by dogs that died mad, but who had forgotten the circumstance, or who could not be persuaded that their complaint proceeded from that cause? Many cases of this sort are on record in European medical works,* upon which I have long since commented. To these, Mr. W. can have ready access; some cases have also occurred in the United States; the latter only shall be quoted, as it is probable Mr. White may not be able to procure the journals in which they are contained.

The boy, Yorke, whose case is related by Dr. Physick,† had no idea of his being bitten, nor could he be induced to think that his symptoms proceeded from that cause, for, "the wound was so small, that when questioned about it in my hearing, he said, "*oh, it was nothing, a mere scratch near my toe.*"‡ Dr. David Ramsay, of Charleston, South Carolina, communicated to me a similar fact, in May, 1796. The person was bitten fifteen months before the disease appeared, and the wound was so slight, that the circumstance of the bite had *entirely* escaped the memory of the sufferer and his family, and was only brought to their recollections by the mention of it to them.

The patient of Dr. Hening, of Richmond, Virginia, was only two years old.§ Another, attended by Dr. Rush, was

year 1816, to investigate the yellow fever. Upon his arrival in Philadelphia, he heard, with regret, that there was a general prevalence of health, and he was advised to visit the city of Havanna, where he would doubtless be gratified to his utmost wishes. He accordingly repaired thither, and amused himself by visiting all the dirty, filthy parts of that abominable city, in the heat of a vertical sun; by going through the different wards of the hospital, and by rubbing the shirt taken off a sailor, who had just died of yellow fever, upon various parts of his own naked person, and smelling it as though it had been a nosegay. He was taken sick on the day of these last feats, viz. the 21st Sept. and died on the 24th. See the account of Dr. Valli's visit to Havanna, by Dr. Frost, in the Med. Repos. New York, New Series, vol 3d. p. 169.

* We refer Mr. White, for several recent cases, to Dr. Moseley's Treatise on Hydrophobia, sixth edition, London, 1813, and to the case recorded by Mr. Bellingham, of a child three and a half years of age, in the New. Med. and Phys. Journal, of Lond., vol. IX., and to Dr. Parry's treatise on the disease, Bath, 1814.

† Med. Repos. New York, Vol. V. p. 2, 1801.

‡ See my remarks on the case, and the disease in general, Med. Repos. Vol. V. p. 292.

§ Med. Recorder, Vol. II. p. 175.

five years of age.* Another, by Dr. Thacher, of Plymouth, Massachusetts, was six years old.† Another, by Dr. Alden, of Connecticut, was of the same age.‡ In these cases, no one can suppose that the imagination had the least agency in producing the symptoms. More cases could be cited, and even of grown persons, who passed through the disease, and until the time of their death, without making any allusions to the supposed cause of their sufferings; but it is believed, that the above are sufficient to satisfy all, (except those who have a theory to support,) of the fallacy of that advanced by Mr. White. Again, how will Mr. White account, upon his theory, for the appearance of the disease in a dumb animal which has been bitten by a mad dog?

It is difficult for men, who, for the sake of singularity, act or write in opposition to the dictates of common sense, or plain matters of fact, which have been established by the universal experience of mankind, to preserve that degree of consistency, which is essential to the making of converts; to their security from attack, and to the stability of their new theories, or principles of action. Thus Mr. White denies the existence of any poison in the saliva of a mad dog, and refused to take precautionary measures to prevent the effects of three bites he received from one, which he acknowledges died mad. He allows that he may "die, but not from a disease to be communicated by a dog." Now, it is asserted that he is bound to account for that assemblage of symptoms which so often result from bites of mad animals, and to inform us, whence they come, and how they are produced. If he do not enlighten us on these points, he must not wonder at people continuing to believe that there is "death in the bite,"§ or refusing to become converts to his new doctrine. He moreover says that no cures have been made in England of "hydrophobia." Here again, as he denies the possibility of any morbid symptoms being produced through the agency of the canine virus, we may fairly ask, what disease he alludes to? This question he is bound to answer.

Besides, Mr. White exhibits a want of information on the subject of cures, which is little to his credit. Dr. Mosely, of London, cured two persons, by the early use of mercury so as to salivate; Mr. Wynne, of Shrewsbury, cured one by

* Med. Repos., New York, Hexade 2d. vol. I. p. 105.
† Ibid. New Series, vol. I. p. 105. ‡ Ibid. p. 60.
§ "Morsu virus habent, et fatum dente minantur."
Lucan's Pharsalia, Lib. IX. 615.

bleeding *ad deliquium*, in 1813; Dr. Shoolbred and Mr. Tymon, of Calcutta, cured two more; the first by bleeding *ad deliquium*, and the last by bleeding and mercury. Their accounts were published in the year 1813. All the diseases described followed bites from dogs supposed to be mad, and the patients exhibited the usual symptoms ascribed to the operation of the canine virus. Mr. White may, indeed, deny that they proceeded from that cause, but in this case he is called upon to say from what cause the diseases originated; and until he does satisfy us on this point, we must remain in the belief, that they were the result of the canine virus.

Upon the whole, we may say, that no greater paradox ever was promulgated, than that by Mr. White, if we except the theory of the learned Berkeley, who says, "Some truths there are, so near and obvious to the mind, that a man need only open his eyes to see them. Such I take this important one to be, that all the choir of heaven, and furniture of earth, —in a word, all those bodies which compose the mighty frame of the world, *have not any subsistence*, without a mind." In other words, Berkeley denied the separate existence of matter, and held, that what we call by that name, is only a modification of thought; and this doctrine he supported by a train of reasoning which his able opponents acknowledge is incontrovertible, according to the doctrines which are generally received respecting the origin of our ideas. Nevertheless, mankind will not consent to deny the evidence of their senses, notwithstanding their inability to explain, or to understand the mechanism of perception, or in other words, the mode in which material objects communicate sensations to their minds; but will therefore remain in the matter-of-fact belief, that there is actually a tangible world, which is external, and which exists, whether they do or do not perceive it. There is this difference, however, in the theories of bishop Berkeley and Mr. White. The first, although tortured by the enemies of Christianity, and perverted by them to the support of their opinions, is absolutely innocent; whereas the other is positively injurious, inasmuch as its adoption would lead persons bitten to indulge in a supposed security, to the neglect of those means which have been found successful in the prevention of the most fatal of any in the catalogue of human diseases.

ART. VIII. *The Lectures of* Sir Astley Cooper, Bart. F.R.S. Surgeon to the King, &c. &c. *on the Principles and Practice of Surgery, with additional Notes and Cases.* By FREDERICK TYRREL, Esq. Surgeon to St. Thomas' Hospital, &c.

(Continued from page 347, last number.)

LECT. XIV.—*On Aneurism.* Aneurism is either external, as when seated in one of the extremities, or upon any superficial artery, or internal, when situated upon any of the arteries of the cavities. In the formation of external aneurisms three stages may be observed; at first a small tumour is perceived which pulsates strongly; it then contains only fluid blood, and may easily be emptied by pressing on the artery which supplies it, thus stopping the flow of blood into the sac. In this stage, the patient seldom experiences much pain or inconvenience, "but is sometimes attacked with cramp or spasmodic contractions of the muscles of the limb below the aneurism."

"In the second stage, the tumour is larger and more solid, and the sac cannot be completely emptied, as in the former case. The blood has in part coagulated in the interior of the sac, and its parietes have become much thickened. The size of the swelling, and its pressure on the surrounding parts, now creates pain, and retards the circulation. The pulsation is still distinct, but not so violent as in the first stage.

In the third stage, the size of the aneurism is still further augmented, and it acquires much more solidity. The pulsation is very indistinct, and only to be felt at that part of the tumour which is opposite to the orifice in the artery. The sac is now almost filled by layers of fibrous matter, and contains but a very small quantity of fluid blood. The patient experiences much severe pain, and great inconvenience in moving the limb, particularly if the aneurism be seated near a joint; the extreme parts of the limb become œdematous, from the pressure of the tumour impeding the functions of the veins and absorbent vessels; sensation is also diminished from pressure on the nerves.

After this, the aneurism continues slowly to increase; the integument over it becomes of a dark colour; inflammation of the cutis takes place, and the cuticle is partially separated by the formation of vesicles. A gangrenous spot next appears, and in a short time an eschar is formed and separates, by which the sac is opened; some blood immediately escapes,

but rarely in sufficient quantity to destroy life. The patient sinks from repeated loss of blood, much more frequently than from one copious hæmorrhage."

Sometimes an aneurism, commencing internally, but breaking externally, causes death in the same way; but when it opens internally, the patient frequently dies instantaneously. The bursting of an external aneurism, sometimes destroys life suddenly. An aneurism does not always prove destructive to life; "I have seen grangrene of the foot and lower part of the leg, produced by a popliteal aneurism; the gangrenous parts separated, and the patient recovered."

Internal Aneurism. "An aneurism of the heart consists of a sac formed externally to the parietes of that organ, but having an opening in it, which communicates with the interior of one of the cavities. It is a very rare disease, and I have only seen three specimens of it; for the dilatations of the ventricles, which are not uncommon, and are frequently called aneurisms, are not really so."

The commencement of the aorta, just where it is covered by the pericardium, is not an uncommon seat of aneurism; "at first it usually presses upon the lung, producing oppression in breathing and cough, and is, at this stage, often confounded with dyspnœa arising from other causes; but as the disease increases, the upper part of the chest becomes enlarged, and a pulsation may be distinctly felt by pressing on the intercostal spaces."

Aneurisms of the curvature of the aorta, project just above the sternum, and when seated at the lower part of the curvature, they now and then appear at the back between the scapulæ. They destroy life by bursting externally, or by their pressure on the trachea, producing suffocation; an example is given, in which death was produced by its bursting into the trachea; upon dissection, an ulcerated opening was found in the trachea from the aneurismal bag. Aneurisms beginning from the curvature of the aorta, sometimes rise to the middle of the neck, and assume the appearance of carotid aneurism; in these cases a swelling can be traced from the tumour to the sternum.

Aneurism of the arteria innominata, will rarely allow of an operation, as there is scarcely any space between the aneurism and the aorta. The operation has been twice performed, once by Dr. Mott of New York; the patient, for a time, appeared to be doing well, but ultimately did not recover.

Abdominal aorta. "When an aneurism is seated above the cæliac artery its pulsations may be distinctly felt at the scro-

biculus cordis: and the pressure of the swelling on the upper curvature of the stomach produces so frequent an inclination to vomit, that the patient is under the necessity of observing extreme abstinence, to keep the stomach in a quiescent state." When the aneurism is seated lower down, and arises from the fore part of the aorta, it sometimes bursts into an intestine; when it arises from the posterior part, it presses upon the spine, and produces absorption of the vertebræ; it then proceeds, until it appears between the last rib and spine of the ilium in the loins. "As the aneurism, when it appears in the loins, and has acquired any magnitude, does not in general pulsate, you must be upon your guard that you do not mistake it for a lumbar abscess, a circumstance I once saw happen."

The surgeon should be particularly careful not to perform an operation for aneurism, until he is perfectly satisfied that no others exist, as it often happens that many aneurisms form in several parts of the same individual at once: Sir Astley states, that the greatest number of aneurisms, which he has seen in the same person, is seven; in detailing this case, he makes the following query—Had his occupation, which obliged him to mount very high ladders, been the means of producing this very extensive disease? Another highly interesting case of the same nature is given by Mr. Tyrrel. Dr. Mott, of New York, informed us of a case, in which, if we recollect right, he tied the external iliac artery for an inguinal aneurism on one limb, and the femoral artery for a popliteal aneurism on the opposite limb. The patient recovered.

Aneurisms are either local or general. "When they occur opposite to a joint, a partial disease of the artery often gives rise to them; but when they are seated in other parts of the body, there is usually a disease in the arteries, which produces a general disposition to their formation; the ultimate success of operations will depend very much upon the disposition to the disease being partial or general." The period of life, at which they most frequently occur, is between thirty and fifty years; age, with general good health, forms no objection to the operation. The male is much more subject to this disease than the female.

Formation of an Aneurism.—Aneurisms were formerly supposed to be produced by the dilatation of the coats of an artery; Scarpa first clearly described that they arose from the absorption of the coats of an artery. "The first circumstance which occurs in an artery, which is about to produce an aneurismal swelling is, that it becomes opake

and slightly inflamed; a small yellow spot appears in the part where the aneurism is afterwards formed, and there is a slight efflorescence surrounding it; a process of absorption next thins the coat of the artery, so that its texture becomes like a fine web of cellular tissue: at this time, nature sets up a process of defence." "As the coat of the artery is absorbed, the part in the vicinity of the artery becomes united to its surface by the adhesive process; thus, if it be an aneurism of the ascending aorta, the pleura is united with it, and forms a portion of the aneurismal bag; the pleura becomes absorbed, and the lung forms a part of the sac; the lung and pleura costalis are absorbed in their turn, and the intercostal muscles and cartilages of the ribs form a part of the sac; these removed by absorption, the pectoral muscle becomes the sac, and when this is absorbed, the skin, which is the only covering for the blood, inflames, dies, and sloughs in the way I have already described, and the person loses his life from hæmorrhage."

Causes.—The general cause of aneurism is a diseased state of the coats of an artery; but this, although the most frequent, is not the only cause of the disease; for sometimes the artery becomes dilated in its whole circumference. Aneurisms are also produced by laceration of arteries, without any external wound, instances of which are given.

Diagnosis.—Aneurism may be distinguished from other diseases by the following marks; if the aneurism be small, press the artery which leads to it, and the sac will be emptied; but if it has existed long, is very solid, and its pulsation not very strong, make pressure on the artery above, and the aneurism will sink under it; upon giving up that pressure suddenly, a jet of blood rushes into the aneurismal bag, and raises it to its former height. In a doubtful case of aneurism of the groin, every doubt vanished upon applying the stethoscope. If a tumour, not aneurismal, has a large artery passing over it, we can distinguish it by the line of pulsation produced by the artery, whilst the lateral parts of the tumour have no pulsation. When a tumour is situated over an artery, by elevating it from the artery, it is deprived of pulsation. "Pulsating tumours in the neck are common, and may be distinguished from aneurism, by desiring the patient to make an effort to swallow. Carotid aneurisms, generally, do not move with the larynx or trachea; other pulsating tumours in the neck are, for the most part, connected with the thyroid gland, and obey the motions of the air tube in swallowing."

Several examples of the spontaneous cure of aneurism are

given. But little advantage can be expected from the medical treatment of this disease. The abstraction of blood from the arm, when the pulse is hard and full, and the adminstration of the carbonate of soda in large doses, with entire rest, are the only means, which, according to Sir Astley, "seem to prevent the increase of the swelling; but the soda is at last obliged to be abandoned, on account of its producing petechiæ, and the irritability of the body is often so increased by an antiphlogistic treatment, that the quickness of the pulse which follows, does as much injury as the natural force of circulation."

Lect. XV. *Operation for Aneurism.*—Before the time of Mr. Hunter, the operation practised for this disease, consisted in applying a tourniquet upon the limb, in making extensive incisions into the sac, and emptying it of its contents; ligatures were then applied both above and below, and the wound dressed as usual. High constitutional irritation followed this operation, extensive suppurations succeeded, hæmorrhages were frequent consequences, and its issue so rarely successful, that surgeons doubted whether it were best to perform it, or to amputate. The principle of Mr. Hunter's operation was, to direct the blood into new and anastomosing channels, by tying the artery which led to the aneurism, and thus preventing it any longer from receiving blood from the heart.

We deem it unnecessary to dwell upon all the operations for particular aneurisms. After the operation for popliteal aneurism, a piece of flannel should be placed around the limb, or a warm stocking worn, to preserve the warmth of the limb, particularly in cold weather, for there is then danger of gangrene. For some days after the operation, a considerable degree of constitutional irritation is produced; "and I have, in two or three instances, known retention of urine occur, rendering the introduction of the catheter necessary." A simple saline draught, with sulphate of magnesia, and opium, if there be considerable irritability, are the best medicines. Care must be taken that the patient does not rest too much upon the heel, "as a gangrenous spot is apt to form there." Perfect rest must be enjoined, particularly for a few days after the ligature has separated, which usually occurs between the eleventh and fifteenth day. The operation sometimes fails from gangrene of the leg, which demands amputation; also from hæmorrhage: this occurs, in some instances, on account of the artery not being closed at the time the ligature separated, and arises from a deficiency of power in the constitution, so that the necessary degree of inflammation

had not been produced, or from a diseased state of the artery itself. "Mr. Birch lost a patient in St. Thomas's Hospital, from the femoral artery being tied too near to the arteria profunda to allow of adhesion of the inner coats of the artery, and consequently to prevent hæmorrhage."

If aneurism of the anterior or posterior tibial arteries be situated at the upper part of the leg, the same operation is required for it as that which is performed for popliteal aneurism. "It will be right, however, to tie the artery by opening the sac, so as to secure it above and below the aperture, if the aneurism be seated low down in the limb, as the anastomosis with the planter arteries is exceedingly free."

The femoral artery sometimes forms an aneurism just opposite the hip-joint, and below Poupart's ligament; also at the origin of the arteria profunda. "If the aneurism be placed any where between the groin and the middle of the thigh, it is best to tie the external iliac artery."

The internal iliac artery has been tied with success, by Mr. W. Stevens, surgeon, in the island of Santa Cruz, for the cure of a large aneurism of the left gluteal artery.

As the history of the case in which Sir Astley put a ligature on the aorta, is so highly interesting, and is also accompanied with a plate, a short account of it will no doubt be acceptable to our readers.—"Charles Hutson, a porter, æt. 38, was admitted into Guy's Hospital, on the 9th of April, 1817, for an aneurism in the left groin, situated partly above and partly below Poupart's ligament. The swelling was very much diffused, and pressure upon it gave considerable pain. On the third day after he had been in the hospital, the swelling increased to double its former size, and extended from three to four inches above Poupart's ligament, to an equal distance below it, and was of great magnitude. Just below the anterior and superior spinous process of the ilium, a distinct fluctuation could be felt in the aneurismal sac, so that the blood had not evidently yet coagulated; and the peritoneum was carried far from the lower part of the abdomen, in such a manner as to reach the common iliac artery, and to render an operation impracticable without opening the cavity of the peritoneum. I therefore was extremely averse to perform an operation, and determined to wait, and see if any efforts would be made towards a spontaneous cure.

(*To be continued.*)

REVIEWS

OF

AMERICAN MEDICAL JOURNALS.

ART. IX. *The New York Medical and Physical Journal, for January, February, and March.* Vol. V. No. 1. 1826.

THIS Number opens with an Address by Dr. Manly, President of the New York Medical Society, on the subject of the present state of our science in that State, with an account of the most appropriate means of improving its defects and correcting its abuses. The extension of education, and the suppression of empiricism, occupy the principal part of it. Dr. Manly complains of the easy admission of pupils to the degree of Doctor of Medicine, as ominous to the profession, from the shortness and insufficiency of the courses of instruction in their schools; and proposes, as a remedy, the appointment of a board of examiners, who should determine the competency of candidates for admission to practice in the State.

The spirit of improvement abroad, in the establishment of medical schools, of which we understand the number in the city of New York alone will, it is expected, in the ensuing winter amount to three, augurs well for the cause of education; and though for a time the community may be filled with a superabundance of medical men, yet as eventually they must depend for their success upon their education, their talents, and their skill, society will be supplied from a large competition, and be enabled to choose those whom experience proves to be the best qualified to relieve their diseases. Medical institutions may abuse their privileges it is true; they may license a great many young men who are incompetent to practice; these, however, must be borne with: knowledge is the pabulum of our existence as a people, and schools will be established; and they will be encouraged, but public opinion will soon discover the excellence and the high and deserved pretensions to patronage of those institutions, which pass after a severe and scrutinizing examination their candidates, and nothing else but the determination to do their duty with faithfulness, will secure and support this preference; and thus the evils of partial education will gradually diminish. The remedy proposed by Dr. Manly, of appointing a board of examiners, who will test the proficiency of the pupil, is a good one, and deserves to be tried. It has had a beneficial effect in Massachusetts, in New Jersey, in Maryland, in Delaware, and will no doubt be sooner or later adopted in all the States. With regard to quackery, it has been so much agitated in our pages lately, that we dismiss the subject with this reflection, that the dissemination of general education among the mass of the people, of dispensaries in the large cities and towns, to protect the poor by giving advice and medicine gratis, the increase of the number of physicians competent to oppose and to take the place by their attention, their influence, and their skill, and the enactment of salutary laws which render it penal, is the principal security against the inroads of these marauders on the lives, and robbers of the property of the people.

Some observations on puerperal fever, by Westel Willoughby, of the college at Fairfield, (N. Y.) follow; they are sensible; but his view of the subject we think is partial, as he inculcates the use of bleeding as a general practice, and always to be preferred to the depleting plan. His recommendation is indiscriminate; and, therefore, we think, liable to exception

Puerperal fever, like all other fevers, is often epidemic, and partakes of the various types, whether inflammatory or otherwise, which they present. When it is sporadic, it may also be of a phlogistic or a low type, according to circumstances—according as constitution, previous debility, confinement in close, hot, unventilated dwellings, or exposure to a moist and miasmatic, a cold, pure and dry air, may lower or heighten the tone of the system. In the first case, the typhous form, venesection will be improper; in the inflammatory, it will, however, be absolutely necessary, and it must be vigorously and early applied; and for two reasons, because the stage of inflammation is always violent, and involves the system more deeply in proportion to the importance and extent of the organ, which in this case is the enlarged and partially distended uterus, and the peritoneum in its many convolutions and surfaces, embracing organs of the highest importance to life. The effect of this process, when it takes place upon these structures, is to debilitate the system extensively and rapidly; and the only plan to prevent this result is to deplete and remove the inflammation by timely and early venesection, otherwise the prostration is effected, and the recuperative powers of the system are entirely lost, by the violence and the extent of the re-action. When the typhous state commences, these stimulants, of which turpentine is the best, and in all types of which, free purging is indispensable, particularly if the stools be unnatural; at the same time, in the typhous state, they must not be carried so far as to debilitate. Dr. Willoughby quotes many authorities for the general prevalence of the inflammatory diathesis in this fever; and from the nature of the parts affected, we believe it often is so, and perhaps in this country, except in epidemic states of the air, generally; his exclusive and determinate expression, however, in favour of any plan of treatment, as applicable to any species of fever, is one which will not meet with the approbation of the profession, as it is not supported by the authorities, who have had ample opportunities, and have given with great precision their opinions upon this subject. Dr. Willoughby accordingly quotes the most experienced writers among whom there is great diversity of opinion and practice. Like dysentery, this disease admits of the inflammatory, the remittent, and the typhous forms, and must be treated accordingly.

Dr. Pascalis, on the sources of animal temperature, considers that the column of air in the lungs is condensed to a degree, which, according to the known laws of nature, must give out two degrees of heat at each inspiration; and that this is the principal source of animal heat.

A case of epilepsy is related by Dr. Rogers, of New York, which was cured by removing a depressed piece of the cranium. The memory and the functions of the mind were perfectly restored. The dura mater was wounded during the operation. He then states some cases, illustrating the effect of depletion in depression of the cranium, according to the plan of Abernethy. A quarterly report of diseases in the New York city dispensary follows.

ART. X. *The New England Journal of Medicine and Surgery*, No. 11. Vol. XV. *for April*, 1826.

THIS number commences with a sensible essay on difficult and impracticable labour, with reflections on the Cæsarean operation.

Dr. Peirson gives a case of death in a few hours, in a child of six months. Vomiting, restlessness and uneasiness, with a pulse of 53, were the only symptoms that preceded death; the illness of the child was about thirty-three or thirty-four hours. The brain was remarkably soft, the only difference from the natural state.

A curious case of a gall stone, three inches and three-fourths in diameter, was voided by a woman, who was affected with violent pain, and incessant vomiting: the pulse 100, full and strong, tongue clear, and no pain in the head. The attacks of vomiting were repeated with pain in the epigastrium, and constipation. The passage of the gall stone produced considerable relief; but a subsequent attack of indigestion and rejection of food followed, of which she died. A schirrous tumour was found occupying the place of the gall bladder. The calculus had passed, by adhesion and ulceration, into the neighbouring intestines.

A curious case of perforation, of two inches in diameter, in the great curvature of the stomach at the cardial extremity, without any appearance of ulceration or redness about its edges is next stated. The symptoms denoted great prostration from some internal cause. It took place in a child aged six months, who died with slight convulsions, with purple spots on the extremities, tremulous motion of the right arm and hand, an irregular, small and hard pulse. Some account of the influenza, and the New Italian medical doctrine conclude the number.

ART. XI. *The North American Medical and Surgical Journal, for April, 1826, No. 11.*

DR. TRENOR gives an account of the relief of several cases of violent pain, like tic doloureux in the jaw above the roots of the teeth. On raising the lip, and pressing the jaw, a part was discovered to be excessively painful; it was freely divided, and bled to a considerable extent. The pain was excessive, but it afforded complete relief. This kind of pain often affects the scalp, and has long since been relieved by a free direction of the part, pain down to the bone.*

Dr. Wood recommends the use of the oil of turpentine in typhus; he considers it as preferable to the ordinary stimuli. It is indicated, when during the convalescence, the tongue becomes dry, delirium, &c. sets in with black discharges; he gives it in the dose of ten or fifteen drops, frequently repeated. We think the dose is small.

Dr. Reynell Coates, in a sensible paper, inculcates the danger of using the lancet after fractures, during the collapse of the system. This caution is certainly necessary to be attended to in all local and surgical diseases, as well as those which are general, and more particularly medical.

Dr. Hunt, of Washington city, attempts to show the danger of maritime situations to consumptive habits. The drier, more uniform and moderate in temperature the air is, the more favourable is it to persons afflicted with this disease. In this paper there are some gratuitous positions, which are both unscientific and untenable; as, that places where animal putrefaction takes place are favourable to weak lungs; and that in these situations the hydrogen gas mixed with the common air destroys the irritability of the living fibre, subdues inflammatory action, and improves the secretions. We believe animal putrefaction is unfavourable to animal life in every shape, except to raising maggots in the mass which is the subject of it, and in the brains of some eccentric doctors, who are content to make their own faith the standard of truth, and require no other proof to support it. With regard to the existence of hydrogen in the air of these places, and its effect on the irritability of the fibre, we must take it as a matter of faith, as Dr. Hunt gives us no proof of either. The essay concludes with the recommendation of the Red Sulphur Springs, about 18 miles south-west of Monroe court house, in Virginia, upon a branch of New River. They relieve the cough, restore the perspiration, and have produced great cures of obstinate pectoral

* See Sandifort's Thes. Medicus.

affections. The air of the pine forests of Alabama or South Carolina is recommended to complete the cure.

A case of extra-uterine pregnancy is related, in which the child was discharged through the anus: the abortion was produced by a fall down stairs. Dr. Neill recommends the use of leeches in erysipelas, of which he cites several cases in which they were used with the greatest success. They produced no bad effects, ulcers difficult to heal, &c. the ordinary circumstance to be dreaded in their application.

Dr. Wiltbank attempts, by some experiments, to establish the vis insita of Haller as the source of the motion of the heart. He thinks the spinal marrow has nothing to do with it.

Some cases, illustrating the use of acupuncturation in rheumatism, ophthalmia, and neuralgia, were given by Dr. Bache; this remedy, in some cases, succeeds remarkably in relieving pain. In general it is only palliative; the pain returns, because the diseases in which it has been used have a greater or less connexion with the general system.

Dr. Shoemaker relieved two cases of poisoning from the kalmia latifolia taken in the flesh of a pheasant, by giving an emetic of mustard. Giddiness, sickness at stomach, and depression of the pulse to 40 strokes in a minute, were the symptoms produced by it. The number concludes with some interesting reviews, and a quarterly summary.

ANALYSIS OF FOREIGN JOURNALS.

ART. XII. DR. H. A. GOEDEN'S PRACTICAL OBSERVATIONS FROM HUFELAND'S PRAT. HEILKUNDE.

Tincture of Iodine.

THE author, never having had an opportunity of using iodine in that disease in which it has been so efficacious, goitre being extremely rare in that part of the country he inhabits, but being fully convinced of its powerful action upon the glandular system, he prescribed it in highly diseased states of that system with prudence and effect.

The medicine was exhibited in four cases of complete scrofula in subjects from six to twelve years of age; in all of whom there were evident symptoms of disease as early as their second and third years. The face was swollen and œdematous, abdomen enlarged and hard; the mesenteric glands were evidently increased in size, the glands of the neck hard and swollen; and in various parts of the body, but particularly upon the inner side of the legs, there was a moist, impetiginous, scrofulous eruption, which formed an acid fluid of so caustic a nature, that it inflamed and excoriated the parts liable to come in contact with it. In all these cases there was tinea capitis exedens, and in one the impetiginous eruption was situated on the right side of the face, extending from the eyelids to the under part of the chin; but in the three others, it occupied the inner side of either lower extremity, and the parts of generation. The most serious and troublesome symptom to contend with, was a severe scrofulous inflammation of both eyes; this was particularly distressing in the case of the girl of twelve years of age. Both her eyes had been almost entirely closed for three years; the conjunctiva and sclerotica membranes were greatly inflamed and very painful, and the eye-balls were so constantly covered all over with a puriform acrid lymph, that they could scarcely be seen, particularly of a morning, when the lymph was so abundant that the orbits appeared entirely filled with it. The eye-lids were generally sealed together; corrosive tears were continually flowing from the eyes; and the intolerance of light was so great, that the patient could not suffer it without the most distressing complaints. A physician, the author's predecessor, despaired of a cure, and pronounced the inevitable loss of both eyes. In this case, the eye-lids were hard, and swollen to the size of a pigeon's egg, and the eruption occupied the face and other parts of the body. During the long development and continuance of this disease, all the usual anti-scrofulous remedies were perseveringly used for months together, without any other results than partial and temporary amelioration of the disease, which invariably broke out with renewed vigour during the exhibition of the very same medicines, that appeared a little before to have opposed a barrier to its further progress. The muriate of barytes, æthiops, calomel and cicuta, acetated kali with the saponaceous extracts and the tincture of rhubarb, acorn coffee and violet tea for common drink, cinchona and the extract of madder, aromatic baths, and malt baths, were all tried with little or no advantage. Ointments of red precipitate and opium, of the white oxyd of zinc; eye waters of the muriate of mercury, and with opium, belladona and stramonium, were used conjointly with setons and perpetual blisters, but all without improving the state of the eyes. An unguent of rose ointment and white oxyd of zinc checked for a time the eruption, and diminished its acrimonious discharge.

Under these unfavourable circumstances, all the best and most active remedies having failed or only temporarily relieved, the author concluded to try the effect of the tincture of iodine, which, on foreign report, he had learnt, had been so useful in diseases of the glandular system. All medicines, except the white precipitate ointment for the eyes, were laid aside; and five drops of the tincture of iodine in barley or sugar water were given twice a day. The dose was increased one drop every two days until it amounted to ten drops, which quantity was administered regularly without further increase. No unpleasant symptoms arose from the use of the iodine, except that the appetite and digestion became impaired; the bowels were occasionally too much bound or too loose, and there was a flatulent swelling of the abdomen. Whether these symptoms were accidental, or the effects of the iodine, cannot be determined; but they were relieved by an infusion of quassia with cinnamon and the elix. Aurantior, comp. The beneficial action of iodine was most striking and rapid in this case, for by the fourteenth day there was a general and evident improvement in the state of the patient; the inflammation of the eyes had diminished much; the puriform discharge from them was less, milder and thicker; the patient could now look at the light without suffering the previous intolerable pain and plentiful effusion of tears; the rolling of the palpebræ had disappeared; the cutaneous eruption was considerably better, and the general habit of body was greatly improved. In four weeks from the beginning of this course of medicine, the change for the better was very great; at this time the ophthalmia and the puriform discharge were no longer present, the eyes were a little weak, and the lids were slightly disposed to agglutination during sleep; these symptoms yielded to a collyrium of rose water and tincture of opium. The iodine was continued in doses of ten drops twice every third day for four weeks longer, when its use was suspended, there being no longer any traces of scrofula. In order to invigorate the constitution, and destroy all tendency to the disease, an infusion of cinchona, with extracts of cinchona, (prepared without heat,) madder, and acetate of potash, was prescribed, and continued for some months. At first, the infusion was taken every second or third day, in the dose of three table spoonfuls; but at a later period, it was taken in the same quantity about once a week. With the same view of strengthening the system, the patient was directed to take twelve baths, prepared with Rad. Calami. Baccæ and Herb. Juniper, Herb. Sabinæ, and afterwards twelve of malt. By these means, a complete and radical cure was effected, and the patient is now (eighteen months since the suspension of all medicines) a strong, fresh and blooming girl.

In the other three cases, the scrofulous diathesis was equally developed, and had produced the same diseased appearances as in the case already described; and in these also, the usual remedies had been used for years without effect, but they were radically cured by the tincture of iodine, which, on account of the youth of the subjects, was at first given in doses of two drops twice a day, and increased one drop a dose every second day till eight drops were taken twice a day. In none of these cases did the author perceive any bad effects from the iodine; they were all cured in a space of from six to ten weeks.

Establishing his opinion upon the success of iodine in the four cases above, the author concludes that it is the most effectual and certain remedy in confirmed and fully developed scrofula, which we know of, particularly when the eyes are much inflamed, and the glandular system greatly diseased. In cases of more partial and recent scrofula, the usual remedies are alone sufficient, and indeed preferable to the iodine; but when the eyes, the skin, and the glands, are diseased, it is particularly indicated.

—

Two cases of Fluor Albus Acris or Malignus of six years' duration.—The author applies the term of "Acris or Malignus" to the disease, whenever

the discharge is so caustic that it inflames and excoriates the parts over which it passes. This species of fluor albus is generally habitual, disappearing and coming on at irregular periods, but it is always more severe and abundant about the menstrual period. It attacks females of all ages after the eighteenth year, but is more common between the fortieth and fiftieth years of age than at any other period, and it appears to depend upon a peculiar dyscrasia of the fluids, and a bad constitution; the nature of the first is not known, but it probably arises from obstructions, enlargements and hardening of the hepatic and glandular systems. The great benefit derived from the use of the revolving saponaceous extracts, acetate of kali with extracts of chelid. Taraxac., Gramin., Dulcamar., Flor. Calendul, alternated with cathartics of rhubarb, infusion of senna and salts, appear to confirm the opinion, which is farther supported by the fact of great quantities of vitiated fluids, polypous concretions and hard masses of brown and greenish matter being evacuated during the administration of the above medicines. The author derived more benefit from the practice founded upon this theory than any other; for it improves the health, corrects the quality and diminishes the quantity of the secretion from the parts of generation. The disease is met with generally in phlegmatic, œdematous and scrofulous habits.

A female, thirty-eight years of age, had suffered more or less severely with fluor albus since her last labour, (about six years,) before which she had never had any trace of the disease. About the menstrual period, the discharge was not only greater than at any other time, but its quality was so very acrid that it inflamed and excoriated the skin wherever it touched, and it even corroded the patient's linen. The pain of vagina and thighs was so great, that the patient was compelled to remain in bed, and apply constantly cold lead water poultices to the parts; her constitution was scrofulous, she had two enlarged and hard glands on the neck, and she suffered occasionally from tinea capitis notwithstanding the greatest care and cleanliness. All and every medical assistance was expended in vain; the strictest obedience to the advice and prescriptions of her medical attendants, and the most cautiously observed diet, were incapable of effecting any thing. Roborantia and astringentia of all kinds, iron in all its forms, vinum ferri with ratania, extract of bark and wine, bark, ratanhia, tormentilla, ferruginous baths with sabina, astringent and emollient injections of tormentilla, ratanhia, cinchona, red oak bark with alum and catechu, of hyosciamus and conium maculatum boiled in milk and pyrmont water with milk as a common drink; all these means were employed without great or permanent advantage. In this desperate case the author resolved to use the tincture of iodine, which he judged would have some decisive effect upon the uterine system, as it exerts such a powerful action on the mammæ which are in such intimate connexion and sympathy with the uterus. Eight drops of the tincture were ordered in the first instance twice a day, and the quantity was increased one drop for each dose every day till it amounted to fifteen drops; and with a view of obviating the effect of the iodine upon the digestive organs, a bitter elixir of the extract of taraxac., quassia, cinnamon water, elixir aurantior. comp., tinc. theb. vinos, and a little spir. mur. æther, was prescribed. The result was rapid and beneficial; except at the menstrual period, the discharge was much less, not at all acrid, and did not come on as frequently as before; and within six weeks from the beginning of the use of the iodine, it disappeared altogether, with the exception that there was some symptoms of it towards the menstrual period, but then it was of a good white colour and perfectly mild. The constitution was much improved, the bloated and pale skin had changed to one of health, and the muscles were firmer and stronger. The medicine was used during sixteen weeks, but never more than thirty drops in a day, and for the last fourteen days it was taken only every other day. After the iodine was discontinued,

pills of extract cinchona, iron and bals. indic. and mild purgatives every four weeks, were prescribed to correct and strengthen the system. Now, after a lapse of two years, she is entirely restored, and there is but a slight disposition to fluor albus at the menstrual period; but the secretion is very inconsiderable, and not at all acrid. In this instance, the iodine was followed by no bad symptoms, and there was no appearance of its having caused the least absorption of the mammæ.

Another case of Fluor Albus in a woman of forty-three years of age, was cured by the iodine administered constantly for three months, and in this case there was likewise no injury resulting from the use of the medicine.

The author flatters himself, from his experience of the efficacy of iodine in glandular and scrofulous diseases, that it will be found very serviceable in scirrhous enlargements of the breasts, and he only awaits an opportunity to learn its utility in such affections.

—

A Peculiar Species of Cephalalgia.

A strong and healthy man of thirty-eight years of age, never a subject of gout, hæmorroids, or any other diseases, except a few attacks of catarrhal or rheumatic fever of short duration, was, in the evening whilst on the easy chair, without previously suffering any uneasy or uncommon feelings, seized suddenly with a violent pain of the head, which caused the tears to flow abundantly, and the feet and hands to tremble so violently that he was with considerable difficulty conveyed to his bed; but in a very short time after being placed there, the pain changed to a dull heavy feeling, with some shooting and throbbing, and in a few minutes more it subsided entirely, so that the patient slept well the whole night, and considered himself perfectly well in the morning, having no unpleasant sensations about the head, nor confusion of ideas. He got up, dressed, and had not been more than ten minutes from his bed, when the terrible cephalalgia returned, accompanied with a profuse flow of tears, distortion of the muscles of the face, trembling of all the extremities, cold perspiration, anxiety, restlessness and nausea. As soon as he was put to bed again, the pain began to abate, and it soon went off as it had done the evening before, and left the patient perfectly free from all appearance of disease; the pulse, temperature of skin, appetite, digestion, and all the secretions, being quite healthy. About ten o'clock he rose to the easy chair, but was scarcely seated before all the symptoms returned, and disappeared upon his resuming the horizontal position. In this peculiar situation he remained without any amendment; he was perfectly comfortable as long as he slept on his bed or sofa, but invariably was attacked upon getting up, and, particularly, severely whenever he attempted to evacuate the rectum or bladder in the upright position. The duration of the attacks varied from ten to twenty minutes, but always longer when the patient had been up longer than usual. The pain commenced in the nape of the neck, and passed over the occiput to the crown of the head, affecting the forehead only on the decline of the attack. According to the account of the patient, the pain may have been situated between the scalp and the bones; all the functions of the body and the mind went on regularly, and there was no complaint whatever, except that it was absolutely necessary to observe the horizontal position constantly to escape the recurrence of the attacks. The author, never having seen, heard or read of a similar or an analogous case, was placed in the most embarrassing situation; he could come to no conclusion about the nature or the seat of the disease, and consequently was at a complete loss for his therapeutical measures. There was no obvious indications for the practitioner; for none could be founded upon the symptoms and the course of the disease; the treatment could not be a rational one under such circumstances, therefore one of a completely empirical character alone was to be instituted. A large blister to the nape of the neck, pediluvia with acet.

scillæ, Dover's powders with the extract. aconit. the application of twelve leeches to the forehead, and a mixture of liquor. ammon. acet. and tart. antim. to excite nausea and vomiting, were prescribed without the least advantage. Nervine medicines were tried next, merely empirically and experimentally, for no suspicion of the disease partaking of a nervous character could be entertained. Assafœtida, Valerian, liquor. ammon. succ. and saturated acetate of kali, were given without success. With the intention of acting by revulsion upon the abdominal organs, purgatives were administered eight days consecutively, and at the same time frictions of æthereal oil, cold washing, and cold poultices, were directed to the head, but all these means proved unavailing. Four weeks had now passed away without any alteration whatever in the disease; the patient's health still remained good, his mind only appeared somewhat depressed from the circumstance of all the medicines administered for his relief having failed, and the author felt seriously disposed to try the effect of the actual cautery; but before proceeding to this extremity, he concluded to see what effect the dropping of æther upon the head might have. The crown of the head was ordered to be shaved the circumference of a dollar, and fifty to one hundred drops of a mixture of ol. cajep, ℥ij. æther. acet. ℥ij. liquor ammon. caust. ℥j. were directed to be dropped from a height of three feet upon it every hour. At last the proper remedy was discovered; the attacks were evidently milder in twenty-four hours; they were less convulsive and painful, the cold perspiration, trembling of the limbs, and anxiety, diminished gradually. The patient was soon able to remain in an upright position from a quarter to half an hour without suffering any attacks, or if they did take place, they were short and mild, except when the evacuation of the bladder and rectum brought them on; in that case they were more violent. The fact was very remarkable, that four weeks after the amendment in this disease began to take place, the patient could sit and stand for any length of time, and walk any and every where without experiencing any inconvenience; but whenever he passed his urine, he felt a dull heavy pain at the crown of the head. Could this disease have originated in, or been connected with, an affection of the gastric or urinary systems? Upon the most cautious and accurate investigation, no disease nor diseased action could be discovered in those parts. The author candidly confesses that in no former instance was he so much at a loss as in this case; he had to grope his way in the dark. What was the nature of the disease, how and from whence did it arise? The solution of this query will be very difficult, if not quite impossible. The patient continued the use of the ætherial mixture six weeks, and was entirely cured of his disease, from which he has not suffered since.

ART. XIII. *The London Medical and Physical Journal, for January*, 1826.

MR. J. SHAW details a "case of lithotomy attended with hemorrhage," which terminated fatally. It occurred during the operation, whilst cutting through the prostrate gland. On dissection, an irregular distribution of the Pudic presented itself, a vessel of considerable magnitude imperfectly filled with wax as far as the incision of the prostrate, from thence it could be traced under the pubes and into the body of the penis, and to its dorsum; the wound in this vessel was at the depth of four and a half inches from the external incision, and was doubtless the cause of the hemorrhage at the time the prostrate was cut. The paper contains accounts of several other instances of this irregularity quoted from Winslow, Tiedman, Haller, Burns, and others, which tend to show that it is not of very rare occurrence, and therefore to be dreaded by the lithotomist.

A case of peculiar nervous excitement, related by J. Vale Ashbury, Esq. is deserving of considerable attention. In many of its features it resembled hydrophobia, and apparently arose from exposure to the sun in very hot weather, whilst the patient was employed for a fortnight in making hay; a cure was effected by means of purgatives and antispasmodics.

—

Mr. A. B. Granville, M. D., F. R. S. details at considerable length a severe case of protracted headach, terminating in Tic Douloureux, and arising from impaired digestion amongst the precursors of that formidable disease. Mr. G. conceives that "intense and obstinate headach following or preceding but invariably accompanying certain indispositions called *bilious*," is the one most deserving of notice. In the instance before us, the first symptoms were headach, and the disease appeared to alternate from the head to the digestive organs; several times during the course of the disease purgatives afforded partial relief; cups and leeches were applied to the head with evident benefit, but when Tic Douloureux made its appearance decidedly; carbonate of iron taken in scruple doses increased to one drachm three times a day, and rhubarb pills, together with enemas to keep the bowels open, rapidly effected a cure.

—

(Medical and Physical Intelligence.)—Under this head we find some interesting notices. The unusual conformation of the nervous system in a cretin, from the Medicinische Jahrbucher for 1819, communicated by Dr. Schiffner, who has subsequently dissected another cretin, the brother of the former, in whom the appearances nearly coincided with the first, the most remarkable of which were these, "the third part of the fifth pair of nerves in all its branches soon after their separation exhibited ganglia or tubera the size of garden peas. That branch of the sixth which accompanies the inferior twig of the vidian nerve into the canalis caroticus, formed on either side a ganglion of the size of a hazle nut. The portio mollis of the seventh but slightly affected; but the portio dura in almost all its branches presented ganglia of the size of peas. In the axillary plexus, and particularly in those nervous bundles that give origin to the spiral-muscular nerve, they were of the size of hazle nuts. The other nerves of the plexus, more especially the external and internal cutaneous nerve, were provided with similar swellings; the ganglia of the dorsal and lumbar nerves were fewer and larger; the largest of all near the christa ilii." Several swellings were observed on the nerves of the inferior extremities. There was nothing unnatural in the great sympathetic and its branches, except that the ganglions in the vicinity of the spinal column had in several places attained an unusual size: on the left side, opposite to the sixth cervical vertebra, there was one of the size and shape of a hen's egg compressed.

These ganglia were an actual degeneration of the medullary matter, and were of a pale rose red colour.

—

In a little girl, subject to convulsions from her infancy, and who died at the age of twelve years of epilepsy, the heart was found to be no larger than a common sized hen's egg, and was almost entirely made up of the right auricle. (*Bulletin des Sciences Medicales, Octobre.*)

—

A tumour of the right ovarium, related by M. Vetter, in a woman at twenty-five years of age, produced by a blow, increased for seventeen years; finally killed the patient at the age of forty-five; weight fifty-six pounds. Its substance was homogeneous, grayish, of a cartilaginous consistence, except at those points where it was softened, and of a substance similar to brain. (*Idem.*)

—

Cupping glasses to poisoned wounds have been proved by some experi-

ments of Dr. Barry and others to prevent the absorption of the venomous matter. Wounds were made upon the back and thighs of full grown rabbits; and after the bleeding had ceased, two or three grains of strychnia in powder, or two or three drops of hydrocyanic acid, were introduced into them. Then, at intervals of three, five, and ten minutes, a cupping glass was applied to the wound, renewing it as frequently as it fell off. No symptoms of poisoning occurred in these animals; but if the cups were not applied, they all died. (*Archives Generales, Octobre.*)

—

Effects of Iodine.—M. Locher-Balber has published several cases illustrative of the beneficial effects of this active medicine. One of them, deserving of notice, is that of a woman aged twenty-five years, who, though in other respects of a good constitution, was subject to violent headach at each menstrual period. Occasionally, instead of this, she was attacked with violent pains in the teeth or bowels. "After taking half an ounce of the tincture of iodine, (dose not mentioned,) she was freed from all complaints, the menses having become regular, and unpreceded by any painful affection." (*Revue Medicale, Octobre.*)

—

Muriate of Gold in Syphilis.—This remedy is as ancient as the year 1540, according to Dr. Gustavus Benaben, who employs the preparation of Dr. Chretien (muriate of gold and soda) in the form of frictions to the tongue, beginning with the one-fourteenth part of a grain, gradually increased to an eighth; sometimes used internally in very small doses. The effects on the animal economy are copious sweats or a great flow of urine. The quantity required for the removal of secondary symptoms from six to twelve grains. *Ibid.*

ART. XIV. *The London Medical and Physical Journal, for February*, 1826.

THOMAS W. CHEVALIER, Esq. presents us with some "general observations on morbid tumours, and on the different modes in which the muscular structure is attacked by cancer and medullary sarcoma." The principal object of this paper appears to be to establish a specific nosological distinction between Cancer and Fungus Hæmatodes, upon the ancient doctrine of final causes. After some preliminary observations, he proceeds to a "description (which he believes to be new) of the totally different methods in which one of the essential animal structures is invaded by those two diseases." Their two chief characteristic differences appear to him to consist in "having appropriated to them two distinct terminations, and in their attacking the muscular structure in two distinct ways." The tendency of cancer is ultimately to ulcerate; on the contrary, that of fungus hæmatodes, if allowed to attain its proper result, is invariably to sphacelate. The fasciculi of the muscles which surround cancer, appear to be suddenly lost in its substance, or as if "inserted into the tumours," all traces of the fibrous character being obliterated either in consequence of pressure or absorption. In medullary sarcoma the fungus in the first instance is separated from the cords of muscular fibres by laminæ of cellular membranes interposed, and are capable of being raised from the surface of the tumour. As the disease advances the distinction of laminæ becomes less demonstrable; the fibres become paler and softer, more brittle, less and less distinct from each other, and from the substance of the tumour. By means of a microscope, however, we are enabled to "trace the lowest muscular fasciculi from their natural origin, where they are apparently sound, into the substance of the tumour, where they are lost in the homogeneous and uniform white pulp." In those fasciculi, which are less internal, we can observe more of the form of muscular fibres collected in fasciculi, which, by means of the glass, may

be traced through the diseased mass, though to the naked eye they seem a portion of the medullary sarcoma.

Mr. C. concludes with stating that he has found these four varieties of disease, viz. medullary sarcoma, soft cancer-like substance, the mottled variety of fungus, and the brown or black variety, reciprocally co-existent and concomitant, and therefore is inclined to include them all under the term Fungus Hæmatodes; as they have the same history, inevitable disposition to sphacelate, and hæmorrhagic tendency, &c.

—

Andrew Blake, M. D., relates an interesting case in a young soldier of epileptic convulsions with hemiplegia, the result of a contusion on the head, received, while wrestling with a robust comrade, on the centre of the right parietal bone, the integuments not divided. Four days after this occurrence, he presented himself at the regimental hospital complaining of general fever, which yielded to the antiphlogistic treatment; headach remained, and gradually became more violent, pulse unusually slow, tongue foul, was apparently cured by local bleeding, blisters and mercury. In four or five days the last mentioned symptoms returned; pulse as low as fifty-four; severe pain over the upper part of the head; similar treatment unsuccessful; in two days more he was seized with epileptic convulsions, followed by hemiplegia sinistra; epileptic fits renewed at short intervals; bleeding, castor oil and stimulating enemeta unavailing. Under these distressing circumstances the trephine was applied to the site of the original injury; the skull was exceedingly thick, and adhered but slightly to the dura mater; no fluid accumulated on or under that membrane, nor any irregularity of the inner surface of the cranium was perceived; yet, as soon as the circle of bone was removed, the paroxysms were mitigated, and ceased in a few hours; in a month the patient recovered the use of his side, and was ultimately restored to perfect health. Dr. B. after citing a similar case from the Edinburgh Medical and Surgical Journal, where death took place at the end of six months, (no operation having been performed,) proceeds to inquire "in what manner did the operation act, as no collection or spicula of bone were discovered?" which he answers by supposing that the determination of blood to the head was relieved on mechanical principles; as it appears from the experiments of Dr. Kellie, that in animals which had been trephined previous to being bled to death, the brain was found to contain very little blood, (owing to the admission of atmospheric pressure upon it,) but those, "whose heads were left entire, contained a considerable quantity of that fluid;" the brain in the one case filled the cranium, in the other it appeared collapsed.

—

A communication of John Whiting, M. D., on the use of arsenic and sulphate of quina in acute rheumatism, is deserving of notice. Having employed arsenic extensively in the cure of intermittents and remittents, he was induced to resort to it in the treatment of rheumatism, from the "striking resemblance appearing to exist between the remittents under his care, and the fever accompanying that disease," and from its erratic character and disposition to renewed accessions of febrile symptoms. His mode of administering it is to give from six to ten drops of the liquor arsenicalis every three or four hours, without any regard to either the fever or inflammation.

In many cases none of the symptoms returned after the existing paroxysms had subsided; in others the future attacks were ameliorated, and a speedy cure ensued.

He also employed the sulphate of quinine in two grain doses every two or three hours, in a similar manner, and with the same results. Dr. W. wishes to be distinctly understood, that he has not discovered in "these remedies any power of removing febrile or inflammatory action, when it

has commenced." He attributes their good effects to some change produced in the system, by means of which a return of the paroxysms is prevented. Their use does not interfere with the usual antiphlogistic means usually employed, but the two modes may be advantageously combined.

In conclusion, he mentions that his friend Mr. Greewood tried the effects of sulphate of quinine in two cases of gout, and that in each of them it effectually prevented the recurrence of the paroxysms of pain, &c.

—

George Jewel, Esq. relates the particulars of a case of poisoning by opium, in which blood was found effused in the brain There is nothing in his account calculated to excite attention, except that cold effusion, employed liberally to the head, relieved for a time the coma.

—

James Boyle, Esq. narrates a case of Anchylosis of the knee joint, which was successfully treated by a modified application of Moxa, &c.

At the time the patient was placed under his care, "the leg formed a right angle with the thigh: the muscles of the whole limb were greatly wasted, the knee was much swollen, and there was no distinct motion to be felt either in the patella or the knee joint." It was, in fact, a case of false anchylosis.

The treatment was commenced with the application of Moxa to the joint daily, together with frictions, and the application of steam twice a day. After some weeks, slight motions of the joint were produced, and all pain on exertion (which had been before excessive) was removed. Finding the moxa alone inadequate to effect a cure, he employed an instrument which he calls a genu-rector for extending the leg upon the thigh. The moxa was continued; this mode was attended with considerable benefit; the swelling of the knee subsided, and the muscles of the thigh and leg began to swell out to their accustomed limits. In order to overcome the tendency in the flexors of the leg to contract, the Hinckley instrument was resorted to, which, by keeping up permanent extension for a short time, effected this object.* By these means a cure was so nearly completed, "that the young gentleman now walks so well, that to the eye of a stranger no lameness is perceptible." In this case the moxa might have assisted; the other remedies, however, were quite sufficient without it.

—

John Frost, Esq. makes some remarks on the erysipelatous inflammations produced by the juice of the Rhus Toxicodendron, and relates several cases, from which it appears that the contact of the juice is necessary to create this disease, which takes place immediately after such contact.

These cases were treated successfully by means of calomel and jalap as a purge, and the application of a lotion consisting of Zinci acetatis ℈ij. spirit. tenuioris f. ℥iss.; tinct. opii f. ℥iij.; aq. distillatæ f. ℥x. Mft. a draught composed of liquor, ammoniæ acetatis f. ℥ii.; liq. ant. tart. gtt. x; Misturæ, camphor, et aq. Menth. virid. ää℥vj. M. was also administered every six hours, and opium occasionally at bed time.

—

Observations on Small Pox, as it has occurred in London, 1825, by G. Gregory, M. D. &c. consisting for the most part of a comparative estimate of deaths before and since the introduction of vaccination, together with a statement of cases occurring subsequently to vaccination.—One hundred and forty-seven cases out of four hundred and nineteen were admitted into the Small Pox Hospital during that year, of whom twelve died. Notwithstanding this painful diminution of reputation that vaccination must sustain from this statement, Dr. G.'s ultimate conclusion from the tenor of events,

* In addition to the means enumerated, walking, marching, &c. were practised; and, lastly, motion was excited in the joint by swinging the limb with a heavily loaded shoe appended.

during "this very interesting year, is, that vaccination has the strongest claims upon the confidence of medical men, and on the national support."

—

Three cases of Tic Douloureux, in one of which about eight ounces of carbonate of iron were taken in thirty-six hours, are communicated by P. C. Blackett, Esq. As the profession is deeply interested in the recital of cases of this formidable disease successfully treated, we shall present an abstract of them.

Case 1. Mrs. C. ætat. forty-three. Occasional pain in the right side of the face for two years past; in the vicinity of the ponted gland; three or four paroxysms a day; believed to arise from irritation of the uterus, consequent to *change of life*. After a purge, carbonate of iron was administered for nine or ten days; pain somewhat alleviated; a blister behind the ear of the affected side; no further amendment; twenty drops of tincture of Belladonna three times a day; other remedies omitted; this in the course of five days relieved her entirely; to prevent a relapse, the dose was given twice a day for a fourth night; no return of the disease.

Case 2. Capt. S. ætat. twenty-six, complained of great irritation in the urethra and bladder, constant micturition, discharge of urine, sometimes copious, at others obstructed, with these symptoms of irritability of the bladder, &c. There was paroxysms of pain over the left eye, pressure upon the site of which created an increase of it. It was, in every sense of the word, Tic Douloureux. "A full sized bougie was passed, which produced pain in the nerve of the forehead." He was then ordered to take oil when his bowels were constipated, and the following pills:—R. Cupri Sulphatis, gr. iij.; Extracti conii ʒi. M. fiat massa in pilulas xviii. quarum capiat unam 6ta quaque hora. In one week the irritation of the bladder was relieved, and in six weeks the cure was completed.

Case 3. Communicated in a letter to Mr. B. from a gentleman at Welford, stating his own case. One year previous, he had been exposed on horseback to a damp atmosphere, the wind at north east; this gave rise to a cold sensation on the zygomatic arch, increasing until he experienced severe pain at times. He tried the carbonate of iron in drachm doses every six hours in honey, with decoct. cincon. infus. cascarilla, and sulp. acid. some relief afforded; at a subsequent attack, tried G. assafœt. et Ferri Sulphat. āā ʒss. fiat massa et div. in pill. xii. Nine of these were taken that evening; more relief than before.

At a subsequent severe attack, he took the carbonate of iron upon a large scale, so that, by his own computation, there were taken eight ounces of that medicine in thirty-six hours, accompanying each dose with a draught containing one drachm and a half of ext. sarsæ, &c. every six hours. The disease was arrested, and the gentleman has considerable hopes of not having a return. The effect on the bowels was only to open them plentifully without griping. A sinapism was at intervals applied to the seat of pain. By a subsequent communication, it appears he was permanently cured.

—

Under the head of Medical and Physical Intelligence, we notice some account of a disease which has lately attracted considerable attention, more especially on the continent of Europe. It is called by Dr. Ramisch, who has published a work on the subject, Gastromalacia; it consists in a softened state of the membranes of the stomach in infants, who, for the most part, have exhibited, during life, anomalous symptoms of disturbance in the intestinal canal. "Vomiting, or diarrhœa, or both, are common, together with lingering febrile action, and much prostration of strength." To the symptoms indicative of the mischief, Dr. R. applies the term Gastropathiæ. He has failed to establish a diagnosis, as the symptoms which precede the organic destruction of the stomach resemble those of less important infantile diseases.

The total or partial destruction of a portion of the stomach in infants has

sometimes been detected after death, without any symptoms occurring during life to excite suspicion of it.

Upon dissection, we generally find the cardiac extremity of the stomach dissolved, as if by caustic; in some instances the pyloric has suffered.

Prognosis generally unfavourable, though a few cases are supposed to have recovered.

Treatment. Authors cannot agree as to the proper mode; in some instances you have to contend with inflammatory action, in others with pure debility.

—

The effects of strychnia in a case of epilepsy, under the care of Dr. Brofferio, (Reperterio Med. Chir. de Torrino, Luglio,) of twenty years standing—ten or twelve fits a day. He began with one-sixth of a grain, and gradually increased to one grain; long intermission of the paroxysms extending from five to thirteen days, were obtained during the treatment, *but the patient ultimately died.*

—

"A curious case of Dyspnœa, cured by the application of a bandage, is recorded, (extracted from a private letter from Dr. Gilby.) The respiration was so very laborious, and at times interrupted, that the Doctor was fearful of a fatal result. Bleeding, &c. had been tried during the three previous days unavailingly; a bandage was applied pretty tight round the thorax and considerable part of the abdomen; the respiration became gradually easier, and in twenty-four hours the patient was enabled to "walk gently about the house."

—

Marvellous effects of Acupuncturation.—Dr. Carbaro, it appears, has published a long essay on this subject, containing some startling propositions, such as penetrating the largest bloodvessels and nerves with impunity, &c. He proceeds to relate some experiments on kittens; three of which were plunged in cold water, and retained there until life was apparently extinct, which being made evident to the bystanders, the Doctor tried to resuscitate them by ordinary means in vain. He then passed the needle through the heart; at the end of fifteen minutes, it (the needle) began to move, which went on increasing, followed by motions of the extremities, respirations, crying, and finally by the movement of the whole body.

His paper concludes with the successful application of the needles in a case of erysipelas of the head, with a threatening of phrenitis. "It was beautiful," says the doctor, "to see the red colour disappearing a minute and a half after the operation; so that, in twelve minutes, the face had acquired its natural colour, the volume of the head had decreased, the eyes opened, the delirium vanished, together with the fever, and the cure was effected with the rapidity of lightning!!" (*Annali Universali, Agosto.*)

—

"Re-union of a nose which had been completely separated" by a broken piece of glass, (extracted from the Journal de Chirurgie und Augen—Heilkunde Von Grafe und Walther. band 7. heft 4.) The separated portion was not re-applied until two hours after the accident; it united perfectly, leaving only a small, narrow, red scar.

—

"Dupuytren recommends the application of leeches in Gangrena senilis. By their frequent application, he cured an old woman, ætat. sixty, in the Hotel Dieu," the usual means having been tried in vain. Extreme caution should be observed in imitating this practice.

—

A case of abdominal pregnancy, during which the subject became again pregnant, and was delivered of a large male infant at the usual time, is quoted from Hufeland's Journal. The cesarian operation was performed, the dead fœtus removed, and the patient recovered.

(Analysis of Opium.) Mr. Robiquet presented to the Royal Academy of Medicine some observations on the new analysis of opium, by the action of watery solutions of muriate of soda, according to the method of Mr. Robinet. This chemist does not think that the organic alkalies exist in vegetables combined with ordinary acids, but rather with particular substances that fulfil the same functions, such as colouring principles, &c. Mr. Robinet has obtained muriate of morphia by means of his process.

ART. XV. *The London Medical and Physical Journal, for March*, 1826.

A CASE of Ictus solaris is related by Mr. B in which hemiplegia resulted. Both the original affection and its consequences were entirely removed by active depleting means; he lost in the commencement 112 ounces of blood, which, together with astringents, purgatives, electricity, the cold shower bath, &c. constituted the treatment.

—

Mr. B. attributes the origin of rheumatism in dragoons (who of all other soldiers are most liable to it,) to their being engaged for hours together in grooming and cleansing their horses in the midst of the heated excrementitious vapour of the stables, and then issuing out in the air in a state of perspiration.

In the treatment he has found only temporary advantage from local or external means; the internal use of the colchicum in increasing doses are to be preferred. Acupuncturation was productive of but transitory benefit. When there was no apparent phlogistic diathesis, the mercurial vapour bath, applied to the whole surface night and morning until a slight action was produced, is superior to every other remedy Mr. B. has ever employed.

—

Two cases of dropsy, one ascites, the other anasarca, in which unusually large doses of digitalis were administered successfully by John Davy, M. D. The medicine was increased first to forty-five, afterwards to seventy grains per day!

—

A case of hydrophobia is given, where "the pustules described by Marochetti were not discovered." The sublingual glands were, however, inflamed, and were cauterized without success. The symptoms occurred forty-eight days after the bite.

—

A singular case of enlarged mammæ is related by M. Delfix of Morlais.

Maria Ahaure, of the lower Pyrenees, ætat. 30—lymphatic temperament, consulted him in 1821 for the venereal disease; mercurial frictions restored her to health. Two years after she applied on account of the same complaint, attended with enlarged breasts: they were three times in which the mammæ had increased to so extraordinary a degree, that when she was sitting they rested upon her thighs, and could be joined together behind the back; the nipples were like hen's eggs; no pain; skin not discoloured, and supple. Another surgeon, unknown to Dr. Delfix, had plunged his bistoury deep into them, in the expectation of finding pus; only a few drops of blood followed; she scarcely felt this operation: at this period she miscarried in the fifth month.

Half an ounce of the pommade of the Hydryodate of potassa, made according to Magendie's formulary, was employed in the form of frictions, together with emollient fomentations. In a month and a half they were much diminished in size. It was intermitted for fifteen days, and then recurred to for three months; they were reduced to twice their natural size, and flaccid. The woman was able to undergo severe labour.

[*To be continued.*]

ANALECTA.

1. *Accidental employment of Iodine, as a remedy for Goitre.*—The number for last July of Magendie's Journal, contains a few interesting observations by a French physician, M. Roulin, on the localities of goitre in South America. From his observations it appears, that none of the circumstances which have been successively supposed to be connected with the existence of goitre, are any thing else than accidental. His inquiries have not hitherto led him to discover any invariable connection between its prevalence, and the physical situation or manners of the country where it prevails. From a great number of facts, however, he has been led to conclude, that wherever it prevails, there is generally a much greater difference between the temperature of the air and of the water, than where it is unknown. He was long at a great loss to account for the following fact. In the province of Maraquito the goitre was at one time unknown, and the women were even remarkable for their beauty. But it had become exceedingly common within fifty years, and in particular it was remarked, that many strangers took the disease after five or six years residence. Many unsatisfactory explanations occurred to him; but, at length he discovered that a liquor, produced by draining in linen bags the salt of certain mines, had been long used for curing the disease, but that for some years back a different salt from another quarter had been used instead of it. M. Roulin tried the efficacy of the first preparation, and his trials left no doubt that it cured goitre. On a subsequent occasion, he got the different salts in question analysed by Boussingault, who found that the useful liquor contained a considerable quantity of iodine; that there was a small portion likewise in the salt from which the liquor was drained; but that the salt of Zipaguira, which had been substituted for the former, did not contain any iodine.—*Journal de Physiologie, Juillet* 1825.

2. *Cure of a Deaf and Dumb Child.*—A boy, ten years old, who had been completely deaf from his infancy, was cured by M. Deleau, a Parisian physician, by a method which has been tried with success before, the forcible injection of air into the cavity of the tympanum through the Eustachian tube. The particulars of the operation are not given, but it appears to have been accomplished without causing any inconvenience, and has proved completely successful. The development of the voice has been very gradual and difficult, and attended with many very singular phenomena. Before the operation he could not hear any noise, however violent; his countenance was dull, his gait sluggish, and his manners stupid. On the restoration of his hearing he testifid great delight, took great pleasure in listening to all kinds of sounds, and was thrown into ecstacy by a musical snuff-box. It was long before he had an accurate conception of the direction of sounds. He very soon began to imitate simple sounds with his voice, such as the vowels a, o, and u, and words containing them, such as *papa, tabac, du feu;* but the more complicated sounds cost him great effort, and he succeeded in pronouncing a few of them, not without extraordinary contortion of all the organs of speech. Very little progress was made in teaching him pronunciation by the sounds merely, but with the aid of the written signs he advanced much

more rapidly. He has now been a year under tuition. "He can distinguish the characters of various sounds, knows when they come from a distance, avoids carriages and horses, opens the door when any one knocks, can appreciate musical rythm, knows all the sounds of his language, can repeat by memory a certain number of easy phrases, and even reply to them, and finally executes by speech whatever his preceptor orders him." It is a curious circumstance, however, that he still continues to use signs only in communicating with other people on ordinary occasions; nay, instead of being gradually replaced by speech, his language of signs has become much more perfect and expressive. He entertains a profound contempt for the deaf and dumb children with whom he used formerly to associate.—*Ibid.*

3. *Singular Case of Disease of the Fifth Pair of Nerves.*—The indefatigable M. Serres has just published a most interesting case of disease and partial destruction of the fifth cerebral nerve, confirming by an observation in man, the extraordinary phenomena witnessed by Bell, Mayo, and Magendie, in their experiments on animals. A man twenty-six years old, was admitted into the hospital La Pitié, for epilepsy. He had at the same time a chronic inflammation of the right eye. The particulars of his case were not minutely attended to for some time, as every attempt made to question him tended to renew the epileptic fits. The inflammation of the eye became acute in December, 1823, and though it was checked by proper treatment, the cornea became opaque, and the sight was lost. Not long afterwards it was also remarked, that the right eye was insensible. In June, 1824, M. Serres having been shown Magendie's experiments on the effects of dividing the fifth nerve in animals, was forcibly struck with the analogy subsisting between these effects and the inflammation, opacity, and insensibility of the eye in his patient; and, in consequence, was led to examine his state more minutely. The right eye was insensible to a blunt probe drawn over it; the right nostril was insensible to snuff, ammonia, and ether; pepper placed on the right side of the tongue caused no sensation. On the contrary, the left eye was quite sensible; with the left nostril the man could smell ether, ammonia, and snuff; and pepper, put on the left side of the tongue, caused salivation, and a sense of heat and pungency. The movements of the jaw were entire; and the *sensation over the whole face and neck was perfect.* (This last fact is contradictory to every experiment hitherto made on the fifth nerve.) A few days afterwards the gums of the right side became red and swelled, and gradually receded from the teeth, which in consequence got loose in their sockets; and some days before the man died, he lost the hearing of the right ear. On dissection, the right fifth nerve was found very much diseased. The ganglion Gasserii was enlarged, of a dull yellow colour, and the fibres were separated by serum; the nerves which proceed from it were in the same condition. The fibrils which form the muscular division passing under the ganglion were quite healthy; and the same was observed in the third branch or inferior maxillary, which, proceeding in part from the ganglion, is afterwards joined by the muscular fibrils. The muscular division of it was quite healthy, while the ganglionic portion had a yellow colour; so that the two portions were distinguished much better than they could be by dissection in the healthy subject. The trunk of the nerve before it forms the ganglion was so soft that it broke, although great caution was observed in raising the brain. The disease could be traced into the substance of the pons varoli from which the nerve arises; but the origin of the muscular division was healthy.

With the exception of the sensibility of the right side of the face, there is not a single fact in this case which does not accord completely with those noticed by Magendie on animals. Not long after, two similar cases occurred in M. Serres's hospital, which he was enabled to cure in consequence of the light thrown upon them by this man's case and Magendie's experiments. So much for the affected sensibility and ignorant interference of those who

have decried that physiologist's labours, and attempted to suppress physiological experiments generally.—*Ibid.*

4. *Application of forcible injections for dilating Stricture of the Urethra.*—M. Amussat proposes to reduce obstinate strictures, by injecting water with considerable force into the urethra. For this end he introduces a catheter, without a point, as far as the stricture, and having fastened to its upper end a caoutchouc bottle filled with warm water, proceeds to propel it by means of a species of tourniquet, which compresses the bottle. Scarcely any inconvenience is caused in cases of distended bladder, by the additional accumulation of fluid in it. When his paper was read before the Royal Society of Medicine at Paris, he exhibited an illustration of his method, by tying a thread round the urethra of a preparation, and then injecting water. The ligature was gradually untied, and the urethra dilated to its natural diameter.

Archives generales des Medicines, Octobre, 1825.

5. *Treatment of Tænia by Croton Oil.*—An Italian physician of the name of Puccinotti, has lately recommended the employment of the croton oil as a successful remedy in bad cases of tænia. He has not used it very often, but the results he has obtained justify the belief that it is a useful remedy when even the oil of turpentine fails, as it is certainly also a preferable remedy in respect to the facility of its administration. The following is an abstract of the only one of his cases which he has given in detail :—A man, twenty-eight years old, had been liable to tænia for six years, during which time a great variety of the most active remedies had been tried by a physician of skill. Puccinotti recommended him to use the croton oil in the dose of one drop, taken in a little beef tea. The patient, following his instructions, lived sparingly for a couple of days, and took the medicine, while fasting, on the morning of the third day. It caused a slight sense of heat in the fauces, and, about an hour afterwards, began to operate as a mild laxative. He had eight stools in the course of the day, without pain, straining, or any uneasiness whatever, and discharged along with them a great number of fragments of tape-worm. The dose was repeated after a day's interval, and this time caused six stools, containing more fragments of the worm. For some days after that, the patient felt himself quite free from his former ailments, and convalesced rapidly. In a month, however, he was again taken ill with giddiness, tormina, and occasional discharge of joints of the worm. The croton oil was therefore resumed, with the same success as before; and it was repeated six times, with intervals of one or two days. He has not had any return of his complaints since.

Annali Universali di Medicina, Aprile e Maggio, 1825.

6. *Treatment of Poisoned Wounds by the application of Cupping-glasses.*—At the meeting of the Royal Academy of Medicine of Paris, on the ninth of August last, Dr. Barry, an English physician, resident in the French metropolis, read an account of some experiments on the effect of applying cupping-glasses to poisoned wounds. According to Dr. Barry, if a mortal dose of strychnia, or hydrocyanic acid, the most deadly poisons with which we are acquainted, be introduced into a wound after the blood has ceased to flow, the usual effects will be prevented as long as the suction is kept up; nay, if the cupping-glasses be applied after the symptoms of poisoning have commenced, the animal will recover. A committee of the Academy was appointed to witness and report on the experiments of Dr. Barry; and their report confirms all his statements. The following is an abstract of the most remarkable experiments: Eight grains of arsenic were introduced into a wound in the thigh of a dog. In four hours he was very ill; and he died in fifteen hours. On another dog, under the same circumstances, a cupping-glass was applied forty-five minutes after the arsenic, and in four hours there was not the slightest appearance of ailment. Six drops of diluted hydrocyanic acid, containing $1\frac{1}{2}$ of the pure acid, were dropped into a wound in a rabbit, and a glass applied immediately afterwards. In twelve minutes, no symptoms

of poisoning having appeared, the glass was taken off. The animal was immediately seized with violent convulsions, and soon appeared dead. It re-revived on the re-application of the cupping-glass. After twelve minutes more had elapsed, the glass was again taken off, and the same symptoms recommenced. On then applying it twelve minutes longer, it was withdrawn permanently, and the animal recovered. A rabbit poisoned under the same circumstances, without the application of the cupping-glass, died in two minutes. One grain of the upas-tieuté was thrust deep into a wound in a rabbit, and a cupping-glass applied immediately. The results were analogous to those obtained with the hydrocyanic acid. On two occasions, half an hour and three-quarters of an hour after the introduction of the poison, the removal of the cupping-glass was followed by the appearance of the peculiar symptoms of poisoning with strychnia; and each time the symptoms receded when the glass was replaced. Dr. Barry thinks these experiments prove, that not only the absorption of the poison is prevented, but likewise what is absorbed previously to the application of the cupping-glass is withdrawn from the circulation; and some have seen in them a proof that certain poisons, previously supposed to act through the blood, really act through means of the nerves. In our opinion, neither supposition is well founded. It is absurd to talk of poison being drawn to the wound after being distributed through the whole circulating mass of the blood; the symptoms disappear, because what is absorbed is either excreted or decomposed, and because, farther absorption being prevented, the poison cannot accumulate in sufficient quantity to prove fatal By intermissions in the application of the glass, the whole poison is absorbed in separate small portions, and discharged from the system in like manner; so that the symptoms do not become dangerous in degree. Barry's experiments, so far from upholding the doctrine of poisons acting by nervous sympathy, appear, in our opinion, to disprove it. We can easily understand how the suction caused by cupping-glasses will prevent absorption. We cannot, on the other hand, perceive how it could prevent the poison from lying in contact with the nerves, which is all that can be requisite to produce the necessary impression. These experiments are deeply interesting, and, in a practical view, highly important.

Archives Generales de Medicine, Septembre et Octobre, 1825.

7. *Dr. Morris's Case of Stone in the Bladder, with a new method of relieving the sufferings occasioned by that complaint.*—The following particulars we have been permitted to extract from a highly interesting communication by Dr. Morris, of Canada. The Doctor's observations derive additional interest from the circumstance of his having been himself the subject of the disease he describes.

Many months since, our author states, he was attacked with symptoms of calculus. He had "violent and excruciating pain in his right ureter, increasing at intervals for about twelve hours, with a profuse discharge of blood." After this the calculus "dropped into the bladder."

To set the nature of the affection out of all doubt, the Doctor had a sound introduced by an eminent surgeon. The result of this operation was complete confirmation of the conclusion which the previous symptoms had led the patient to adopt—and now an opportunity presented itself of putting to the test of experience, on his own person, a speculation which the Doctor had entertained for a considerable time anteriorly to the supervention of the symptoms above mentioned. Different considerations had inclined Dr. M. to the opinion, that the introduction of a lubricating fluid into the bladder would be productive of ease and advantage. This experiment, therefore, he now determined on trying on his own person, and he at length put the project in execution. "I first took care," says Dr. Morris, "to rid myself of the contents of my bladder; this I had no sooner accomplished, than, with a large syringe, I injected (through a small leaden tube reaching to the sphincter, no further) about two ounces of the oil (cold drawn castor-oil),

and I cannot express to you my feelings occasioned by the change which took place upon the moment of its introduction, for *it seemed as if a new lower half had been given me.*"—"The absence of former symptoms still continuing, I went to bed, and can safely say that I had not known, for some time previous, the pleasure of a sound and uninterrupted sleep. Latterly I never awoke without a wish to make water, and the morning following was the first exception to it. When I did obey the call, I took care, finding that the oil came last, to leave as much within the bladder as I could. This I had little difficulty in effecting, as it does not dispose the bladder to contract as other fluids do."

After this, the bladder was constantly supplied with two or three ounces of oil, and under this treatment every symptom of irritation vanished, and during two months, namely, from the first introduction of the oil up to the date of the Doctor's departure for Canada, no one symptom reappeared to remind him of the existence of the calculous concretion.

Previous to using the injection, Dr. Morris had *tried the introduction of Weiss's* instruments, and endeavoured to enlarge the passage with the hope of expelling it, knowing that the stone was not large; but, "whether it was from any defect in the form of the instrument I employed, says Dr. M., or from my own want of skill in the management of it, which latter is the more likely, I cannot say; I can only affirm, that with all the delicacy I could master, I could not obviate the disagreeable feeling its presence occasioned. The contraction of the bladder in its endeavours to expel it were intolerable, and with the extension of the parts and irritation it left, it gave rise to an incontinence of urine of three months' duration."

An interesting remark of Dr. Morris's, to which we cannot neglect calling the reader's attention, is, that after the injection of the oil, and during the experiment, he has observed particles of sand evacuated. Before the use of the injections the Doctor does not appear to have detected any gravel passing with the urine. He is disposed therefore to believe, that the appearance of sand is to be attributed to a softening of the stone by the oil; and, taking into account the absence of symptoms of irritation in the kidney, ureter, and bladder, that view of the matter is perhaps more probable than any other. Of the further progress of Dr. Morris's experiment, we shall be very glad to receive any information the Doctor may be enabled to communicate.

Should the result of any repetition of Dr. M.'s experiment, that may be made on this side of the Atlantic, reach us, we shall of course make it known, on the earliest convenient occasion, to all readers of this Journal.

London Med. and Phys. Journ. April, 1826.

8. *Letter from Dr. Ballingall to Dr. Duncan, jun., communicating a Case of Hernia Infantilis.*—I have much pleasure in transmitting you the following brief account of the case of *Hernia Infantilis*, on which I operated about ten days ago. Although this species of hernia may not be unfrequent, it has very rarely become the subject of operation; and the following case may therefore be thought worthy of notice in your Journal.

William Bowman, æt. 13, was brought into the hospital on the afternoon of Sunday the 5th instant, with a hard inflamed tumour on the right groin, bearing the characters of strangulated hernia. The history given of it by his relations, who accompanied him, was imperfect and somewhat contradictory; but it was distinctly stated to have been strangulated since the preceding Tuesday, frequent attempts having been made to reduce it in the interval without success.

Although the tumour was a good deal inflamed and tender, with some degree of lividity of the scrotum; the other symptoms were not urgent, and I therefore requested the house surgeon to have a purgative glyster administered, to let the boy be placed in a warm bath, and to make gentle efforts for the reduction of the tumour by the taxis. These not proving successful,

I proceeded to the operation at four o'clock, under the impression that I had a case of common congenital hernia to deal with.

The external incision, and first steps of the operation, were performed in the usual manner. After dividing several layers of fascia, the tunica vaginalis testis was exposed, and on laying this freely open the testicle came into view, having the hernial tumour situated above it, still covered by its proper sac. On dividing this with great care, a very singular appearance presented itself. It was at first thought to be a portion of the omentum lying over the intestine, or a part of the colon with its appendices epiploicæ; but, on more accurate examination, it proved to be a newly formed substance, composed of coagulable lymph. Some portions of this newly formed substance adhered firmly to the gut, others were removed with the fingers, and on the intestine being exposed, it appeared of a dark chocolate colour; at first it felt tense, but immediately became flaccid; and the stricture in the external ring being removed, it was easily reduced.

The functions of this boy's bowels were restored in a few hours after the operation. He eat some pottage on the following morning for breakfast, and has since continued without any unfavourable symptom whatever.

Queen-street, 15th March, 1826.

Edinb. Med. and Phys. Journ. April, 1826.

9. *Crusta Serpiginosa Infantum*, (*Scabies.*)—A species of *itch* (scabies), termed by German authors *crusta serpiginosa*, is frequently in children improperly considered as a syphilitic affection.

When of long standing, the child affected with this complaint becomes miserably emaciated, from constant irritation and want of sleep, while the whole surface of the body, together with the scalp and *face*, is covered over with an angry papular eruption, so that the skin, when the papulæ are very numerous, assumes a red or copper colour. Sometimes also extensive desquamations take place, and superficial ulcerations, particularly about the arms, folds of the thigh, &c.

As the eruption in this disease appears on the *face* as well as elsewhere, it may be alleged, perhaps, that it is improper to call it a species of *itch*; some persons being of opinion, that no eruption of that nature ever, under any circumstances, affects that part.

The accuracy of this opinion, however, is denied by the writer to whom we are principally indebted for the preceding description, who, in support of the contrary opinion, observes:—

"1st. We have seen two cases of true *pustular* itch, affecting the ears and *face* in adults.

"2dly. We believe the face in adults is so rarely affected with psora (*scabies?*) only because constant exposure to the air tends to harden it, so that it is less liable to suffer from the contact of infectious matter.

"3dly. The hands are, it is true, equally exposed, (*not equally perhaps?*) but they only suffer in those parts which, by their situation, are less (*least?*) exposed, and consequently covered with a more tender cuticle, viz. between the fingers, the wrists, &c.

"4thly. The face in infants does not enjoy this immunity from psora, because in them its cuticle is scarcely less tender than that on other parts.

"And, 5thly. When a nurse and child, both free from itch, are exposed to its infection, the disease always appears first upon the child, as being the more susceptible of the two."—*Edinb. Med. Journ. Jan* p. 239.

10. *Employment of Extract of Belladonna in Cases of extreme Sensibility of the Eyes.*—Marche, aged 49, of sanguine temperament, had suffered twelve days from ophthalmia of the right eye, which he could not trace to any particular cause. The ocular mucous membrane was red, and the pupil, which was contracted, became obliterated when the eye was exposed to a feeble light; the pain, which had been so great as to prevent sleep, being at the same time greatly augmented. Recourse was twice had to general bleeding; twenty-

five leeches were applied to the temples, and stimulating pediluvia were employed, by which means the inflammatory symptoms were for the most part subdued; but the pain and contraction continued, and did not allow the patient the least rest. Frictions were then employed at the base of the orbit, with extract of belladonna, diluted with water. Two hours after the first application the pain was less severe, the pupil began to dilate, and the patient was able to sleep. The next day the benefit was more marked, and the pain decreased, and the pupil dilated daily, the patient being enabled to bear increasing degrees of light: and on the eighth day of the employment of the belladonna, the cure was so complete, that no difference could be seen between the eye that had been affected and the other.

Caroline Henry, aged 18, of a lymphatic temperament, had for some time had diseased eyes, partly attributable to her trade as a mantua-maker; and her menstruation had always been irregular. Being attacked with simple acute ophthalmia, she had recourse to cold lotions, which, after some days' continuance, checked the lachrymation, redness of the conjunctiva, and tumefaction of the eyelids; but considerable pain remained, and, above all, a sensibility to light, which prevented the patient from opening her eyes in the day time. On this account she became a patient of La Pitié. As very little inflammation was found to remain, frictions with the belladonna were immediately employed, and in six days all the symptoms were completely dispersed.

Joseph Festori, aged twenty, *fumiste* (curer of smoky chimneys), of a lymphatic temperament, and subject to ophthalmia, had a severe return of one attack, and came into the hospital. His eyes were red, painful, dry, burning; the lids œdematous; and he had headache. These symptoms were successfully combated by antiphlogistics, by two bleedings from the arm of twelve ounces each, and by the application of fifty leeches to the temples. Revulsives directed to the intestinal canal produced a good effect. Nevertheless, although the inflammatory symptoms yielded for the most part, much pain of the eyes remained, with troublesome lachrymation, and marked contraction of the pupil; and the least light or brightness was insupportable. M. Lisfranc ordered frictions with the belladonna, and an immediate amendment took place; so that at the end of five days the pupil was no longer contracted, and there was no lachrymation or pain.

Rev. Med. Janvier, 1826.

MEDICAL INTELLIGENCE.

1. Dr. Emmons, of Kentucky, has used calomel in ophthalmia, both acute and chronic, with the greatest success. It was dropped, in minute quantities, into the eye, by raising the lid. Its effect was most rapid and decided. Obstinate cases were cured by it in a few days.

2. Dr. Thomas Worthington, of Clifton, Hartford county, Maryland, has succeeded in reducing a bubonocele which had resisted the ordinary means, by pressure of a weight of four or five pounds placed upon it. The parts were relaxed by drawing up the legs, the patient being placed on his back. The weight was secured by bandages, which made some additional pressure. The operation had been advised, but the patient, by the continuance of this remedy, was at length happily relieved.

3. Dr. Charles Brown, of Albemarle county, Virginia, has favoured us with an account of several cases of purpura hæmorrhagica, which were relieved by active purging. The disease, it is remarkable, appeared after and during the convalescence from bilious fever. It appeared to be induced, in some cases, by eating unripe peaches and apples. The purgative used was the sulphate of soda: bleeding was also resorted to, in small quantities.

4. It appears from a communication from the trustees of the Medical College of Ohio, that the number of students amounted to sixty-three during the last session. They appear to be prosecuting the business of education with great spirit, and we regret that want of room prevents us from giving a more detailed account of their proceedings.

We intended also to have given an analysis of an interesting address to the class of 1825-6, on the medical character, by Dr. Hossack, of New-York. The spirit breathed in that paper deserves the warmest eulogy. We hope that Dr. Hossack, in reorganizing his school, will meet with the success which his high character so eminently deserves.

5. The valuable adhesive plaster of Mr. Griffitts, at the corner of Eighth and Chesnut streets, Philadelphia, is coming into general use: the high testimonies in its favour sufficiently establish its utility. The subscribers to this Journal who wish to patronise a valuable improvement, will, we think, be well pleased with this plaster. Its convenience, from being ready prepared for use, is a recommendation.

6. *Medical and Chirurgical Faculty of Maryland.*

At an annual convention of the Faculty, held in Baltimore on Monday, 5th June, the following officers were elected for the ensuing year:

Dr. R. Goldsborough, of Queen Anne's, President; Dr. W. Fisher, Rec. Sec.; Dr. J. Buckler, Cor. Sec.; W. W. Handy, Treasurer.

Board of Examiners for the Western Shore—Drs. J. Buckler, W. W. Handy, S. K. Jennings, P. Macaulay, W. Fisher, W. Donaldson, M. S. Baer.

Board of Examiners for the Eastern Shore—Drs. Ennalls Martin, R. Moore, Theod. Denny, H. H. Irving, Tristam Thomas.

CENSORS.

City of Baltimore—1st Ward, Dr. H. Johnson; 2d do. Dr. S. B. Martin; 3d do. Dr. D. M. Reese; 4th do. Dr. D. Taylor; 5th do. Dr. J. Page; 6th do. Dr. A. Alexander; 7th do. Dr. R. W. Hall; 8th do. Dr. R. Stewart; 9th do. Dr. G. Gibson; 10th do. Dr. M. S. Baer; 11th do. Dr. W. Baxley; 12th do. Dr. J. H. O'Donavan.

City of Annapolis, Drs. John Ridgely, D. Claude; Frederick-Town, Drs. Jacob Baer, W. B. Tyler; Chester-Town, Dr. Peregrine Wroth; Caroline county, Drs. G. Martin, C. Tilden; Hartford, W. Dallam, Thomas Worthing-

ton; Kent, Morgan Brown, Edward Scott; Cecil, —— Parker, John King; Worcester, J. S. Spence, J. S. Martin; Somerset, S. K. Handy, Henry Highland; Dorchester, W. Jackson, Francis Phillips; Baltimore, Aug. Taney, Howes Goldsborough; Anne Arundel, Joel Hopkins, Jonathan Waters; Calvert, —— Blake, —— Hungerford; St. Mary's, Jos. Stone, W. Edelin; Charles, W. Weems, W. Queen; Prince George's, B. J. Semmes, Charles Duvall; Montgomery, Otho Wilson, W. P. Palmer; Frederick, W. Willis, H. Staley; Washington, W. Hammond, W. W. Hitt; Allegany, J. B. Lawrence, S. P. Smith; Talbot, N. Hammond, Jr. S. Kemp; Queen Anne's, Jonathan Crane, R. Goldsborough, Jr.

The following gentlemen have been admitted members of the Medical and Chirurgical Faculty, since the 7th of June, 1825: Dr. Magill, Hagerstown; Charles E. Smith, M. D., Baltimore; Thomas A Roberts, M. D., Ed. Edrington, M. D., C. L. Green, M. D., B. Fussell, M. D., Cecil; Jonathan Manro, M. D., Frederick; W. B. Magruder, M. D., John Howland, M. D., Baltimore; J. H. Miller, M. D, W. J. Edelin, M. D., St. Mary's; Septimus Davis, M. D., Harford; Josiah Marsh, M. D., Washington W. Hitt, M. D., Boonsborough; Richd. W. McPherson, L. M., Charles county; Edw. Miles, L. M. do.; Charles Jamison, L. M., do.; Jno. Fonerden, M. D., Baltimore; J. A. Clough, Caroline county; John M. Gibson, Baltimore; Geo. M. Roberts, M. D., T. Jefferson Moore, M. D., P. Hollingsworth, M. D., J. H. Clagett, M. D., Frederick; Franklin Waters, M. D., P. Georges; Washington Waters, M. D., Montgomery; Jos. Biggs, M. D., Frederick; J. D. Garrott, M. D., Thomas Owings, M. D., Baltimore; Thomas, Nohr, L. M.

7. At a meeting of the Counsellors of the Massachusetts Medical Society, holden June 7th, 1826, the following gentlemen were elected officers of the Society, viz. James Jackson, M. D., President; Abraham Haskell, M. D., Vice President; John Dixwell, M. D., Corresponding Sec'y; George Hayward, M. D., Recording Sec'y; Jacob Bigelow, M. D., Treasurer; Enoch Hale, Jr. M. D., Librarian.

8. At the annual meeting of the New-Hampshire Medical Society, holden at Concord, June 6, 1826, Dr. R. D. Mussey was elected President, Dr. A. Crosby, Vice-President; Dr. Peter Bartlet, Secretary; Dr. Josiah Crosby, Treasurer. Drs. Josiah Crosby and Peter Smith were appointed delegates to attend the medical examination at Dartmouth College.

The Society resolved, that every candidate, before he can enter upon the study of medicine, shall produce satisfactory evidence that his education is sufficient to enter the freshman class in Dartmouth College; that he shall sustain a good moral character; and that he shall read medicine four full years, attend two full courses of medical lectures; or, if he has a college education, he shall read medicine three years. This law to go into effect after 1829.

9. *Medical Society of New-Jersey.*

It is stated in the preamble to the constitution of the Medical Society of New-Jersey, that "a considerable number of practitioners of physic and surgery in East New-Jersey, having agreed to form a society for their mutual improvement, the advancement of the profession, and the promotion of the public good; and, desirous of extending the usefulness of their scheme, and of cultivating harmony and friendship among their brethren, they did request and invite every gentleman of the profession in the province, who might approve of their design, to attend their meeting to be held in the city of New Brunswick, July 3d, 1766; at which time and place the constitution and regulations were to be settled and subscribed."

In conformity with the above agreement and invitation, a respectable number of physicians assembled, and, after due deliberation, adopted a constitution for their government.

From this time, until November 14, 1775, the Society continued to prosper; regularly meeting twice in each year, viz. in the months of May and November, and comprehending a large proportion of the respectable physicians of the province of East New-Jersey. During the above period, several unsuccessful attempts to obtain a charter from the governor and council of the province were made.

Owing to the war which now took place between the colonies and the mother country, and which was peculiarly disastrous to this and the adjoining states, the meetings of the Society were suspended; and it may not be amiss to observe, that several members of the Society were among the most distinguished and zealous asserters of the liberties of their country. The first meeting of the Society after the war, was held at Princeton, on the 6th November, 1781. Semi-annual meetings of the Society were held with much regularity afterwards, and attended by increased numbers of the profession from all parts of the state. In the autumn of 1790 the Society was incorporated, by the style and title of the Medical Society of New-Jersey. The above charter has undergone various modifications and alterations by legislative acts. District or County Societies have been authorized and generally organized throughout the state. The general Society is formed by delegation from the County Societies, and assembles semi-annually, in May and November.

The very desirable objects had in view by the founders of this Society, (which is said to be the earliest medical association in the union,) have, we think, in a good measure been obtained; the more prominent of which were, to promote a more friendly correspondence and communication of sentiment among the members of the profession; a more regular mode of practice, and of charges for services rendered; and a careful regard to the qualifications of candidates for license to practise.

Extracts from the Laws, Rules, and Regulations.

The standing committee shall consist of three, and be considered members ex-officio of the Medical Society of New-Jersey; whose duty it shall be, at every anniversary meeting, to investigate and report the general state of health of the citizens of New-Jersey during the preceding year; the causes, nature, and cure of the epidemics (if any have prevailed) in any part of the state; curious medical facts, discoveries, and remarkable cases, that may have come to their knowledge. Also, to report all irregularities, neglect and contempt of the laws, rules, and regulations of the Medical Society of New-Jersey, on the part of the District Societies or their censors.

They shall be the guardians of this institution, clothed with authority to watch over its rights and privileges, and suggest for consideration any subject or matter which may seem fit and proper for the promotion of medical science, and the best interest of the profession. It shall be their duty to prepare for publication, in such manner as shall be directed, all cases, facts, circumstances and observations on medical and philosophical subjects, either of a general or local nature, as may be considered by the Society worthy either to promote its own respectability or the well being of their fellow citizens.

The censors of each of the District Medical Societies shall not proceed to examine any candidate, until he can give satisfactory evidence of having arrived to the age of twenty-one years; studied under the direction of some regular practitioner of medicine the term of four years, and attended at least one course of medical lectures: but, if he shall have obtained a diploma from any college, then three years study, including a course of lectures, shall be considered sufficient.

By the laws of New-Jersey, a graduate in medicine cannot pursue his profession in that state without first obtaining a license, and undergoing an examination by the censors, which law the faculty are determined to put in full force.

LIST OF MEDICAL GRADUATES, 1826.

10. *Bowdoin College, Maine.*

Horace Bacon, Cynanche Maligna; David Folsom, Dyspepsia; Samuel Ford, Dysentery; Alva Godding, Fever; William B. Gooch, Delirium Tremens; Samuel Greely, the Structure and Functions of the Skin; Ebenezer P. Hills, Enteritis; God. Hitchcock, Typhus Mitior; Cyrus Knapp, the Influence of the Mind on the Functions of the Body; Richmond Loring, Cholera Infantum; William Ludwig, the Fœtal Circulation; Martin M. H. Markoe, Inflammation; Charles H. P. M'Lellan, Tic Douloureux; George Pockard, Puerperal Fever; Eben. Parsons, Dyspepsia; Augustus Peirce, Empresma Cephalites; James H. Peirce, Dyspepsia; Jere. S. Putnam, Cynanche Trachealis; Increase S. Sanger, Inflammation; Cephos Whitney, Pneumonia; Levi Willis, Change of Climate.

11. *Berkshire Medical Institution.*

Joshua Blodgett, Cynanche Trachealis; Elihu S. Hawks, Intemperance; Austin Sherman, Sanguinaria Canadensis; Otis Boise, Dysenteria; Andrew Sill, Indigestion; Chandler Smith, Cholera Infantum; Wm. H. Jones, the Influence of Habit; Jared Bement, Alcohol; George S. Smith, Dyspepsia; Jefferson Church, Dysenteria; George Hoyt, Phthisis Pulmonalis; Chester J. Freeland, Paralysis; I. De Blois Sherman, Ophthalmia Chronica; Luke Wellington, the Motion of the Blood; Peter P. Rossman, Climate; Patrick Carpenter, Necrosis.

One hundred and fifteen students were matriculated the last lecture term. The Shearer premium was awarded to Oliver S. Root, M. D., for the best dissertation on hectic fever.

12. *Medical Institution of Harvard University.*

Stephen Ball, Jr., Croup; Joseph Clark, Dysentery; Joshua B. Flint, A. M. Sympathy; Henry Little, A. M. Materia Medica; John Mason, A. M. Delirium Tremens; Samuel B. Paris, A. M. Symptoms; J. B. Richards, A. M. Erysipelas; Horatio Robinson, A. M. Colchici Aut.; David H. Storer, A. M. Hearing in Fishes; William Workman, Digestion; Jacob Wyeth, A. M. Necrosis; Absalom Thompson, Intermittent Fever; J. Greele Stephenson, A. M. Theory of Diseases; Thomas B. Kitredge, A. M. Diabetes; Ralph Farnsworth, A. M. Functions of the Skin; Oliver H. Blood, A. M. Respiration; Isaac P. Smith, A. M. Hydrops Thoracis; Horatio Adams, A. M. Sulphate of Quinine; George M. Smith, A. M. Delirium Tremens; Joseph Palmer, A. M. Bloodletting; Jonas H. Lane, A. M. Colchicum; John Flint, A. M. Fever; Samuel Dodge, A. M. Sympathy of Stomach; Julius S. Mayhew, Assimilation.

13. *Yale College.*

Samuel Beach, Lemuel W. Belden, Benjamin Bissell, Henry C. Brown, Lyman Crese, G. Ives Cowles, Charles H. Dutton, Edwin D. Ely, Warren A. Fuller, Henry A. Hart, Henry C. Hart, Josiah I. Hunt, Charles B. M'Carty, Denison B. Palmer, Ames Walbridge, Theophilus E. Wood, William Woodruff.

New-York—Henry H. Brissell, David S. Doge, Daniel Lacy, Bostwick O. Miller, John B. White.

St. Croix, West Indies—Peter L. Armstrong.

Vermont—Charles G. Greene.

Rhode Island—Edward W. Greene.

Louisiana—Surville Hebert.

Massachusetts—Leonard Pierce.

14. *University of Vermont.*

Wilkes S. Alger, Scrofula; Paschal P. Brooks, Phthisis Pulmonalis; Anson Brackett, Hydrocephalus; Preston Chamberlain, Effects of customs and fashions of civilized life on Health; Norman Cleveland;* J. C. Colby, Hepatitis; John Hamilton, Delirium Tremens; Lyman T. Jenny, Caloric; Zenas C. Johnson, Cynanche Trachealis; Alexander H. Jones, Inflammation; Samuel K. Lyon, Dysentery; Ezekiel Minkler, Enteritis; Burril S. Miner;* Lewis Samburn, Tartrite of Antimony; Ezra Scovill;* Orange Smith;* Rensselaer Soule, Dystentery; Lazarus Tousy.*

* These gentlemen presented their theses, were examined, and received diplomas, at commencement, Aug. 1825.

15. *University of New-York.*

Massachusetts—Reuben Knox, Hepatitis.

Connecticut—George E. Palmer, Neuralgia.

New-York—Daniel C. Ambler, the Infantile Remittent Fever; James Andrews, Dysentery; William James Barry, Hydrocele; William H. Boyd, A. B., Peritoneal Inflammation; John Binsse, Strictures of the Urethra; Amos H. Brown, Chronic Inflammation; Henry G. Dunnel, Sympathy; James M. Gardiner, the Diagnosis of Abdominal Diseases; John M. Glover, Aneurism; William Grigg, Labour; John F. Gray, the buffy coat of the Blood; Henry E. Griffith, Conjunctival Ophthalmia; Lewis Hallock, the Functions of the Skin; Josiah D. Harris, A. M., Puerperal Fever; Stephen R. Harris, Aneurisms; William M. Ireland, Phlegmasia Dolens; Benjamin F. Joslin, A. M., Radiant Caloric; Benjamin C. Leveridge, Inflammation; Samuel Marshall, Croup; Matthew M'Ilvaine, Inflammation; Walter C. Palmer, Epidemic Catarrh; James C. Paul, Animal Heat; William Power, A. M., Cow-Pox; Mark Stephenson, Structure and Functions of the Skin; Alfred Wagstaff, A. B. Prostate Gland.

New-Jersey—Edward Taylor, jun. Lumbar Abscess.

Pennsylvania—James Fitz Patrick, Emansio Mensium.

District of Columbia—Richard S. Briscoe, jun. Hepatitis.

North Carolina—Griffith J. Mac Ree, Yellow Fever.

South Carolina—William R. A. Boulware, Inflammation of the Veins.

Georgia—Charles Sturges, Topography, Climate, and Diseases of Burk County, Georgia.

West Indies—Isaac A. D. Lima, Fractures.

16. *University of Pennsylvania.*

Pennsylvania.

Isaiah R. Matlack, Dysentery—Isaac Bruner, Medical Topography and Epidemics—John B. Craighead, Gunshot Wounds—Jacob Baughman, Trachitis—George Smith, Cynanche Trachealis—John W. Burrel, Influenza—Samuel F. Ralston, Hepatitis—Joshua W. Ash, Hernia—Charles Randolph, Mania à Potu—Alexander H. Whitman, Improvements of Surgery—Jonathan B. Willauer, Dysentery—Thomas Wharton, Blood-letting as a Preventive of Inflammation in wounded Joints—Caspar Morris, Medical use of Sulphur—Samuel G. Clarkson, Amenorrhœa—Jacob Pennypacker, Idiopathic Dyspepsia—William Seal, Cholera Morbus—Daniel Baugh, jr. Tracheitis—Mark Darrah, Bilious Colic—Harper Walton, Morbus Coxarius—John Chapman, Suspended Animation—Abraham Helffenstein, Dyspepsia—Henry K. Lathy, Dyspepsia—Joseph Trevor, Foreign bodies in the œsophagus and œsophagotomy—Isaac P. Trimble, Phlegmasia Dolens—George Mifflin, Uterine Hemorrhage—William C. M'Call, Cholera of the East—Jacob Lentz, Trachitis—John Gregg, Nitric Acid in the Pectoral Affections—Henry Lardner, Arthritis—William Ashmead, Hepatitis—Edward Swift, Injuries of the Head—Joseph Shallcross, Dysentery—Jacob Glatz, Rheumatism—Charles

Abercrombie, Fractures of the Thigh—Charles Mifflin, Injuries of the Head—Charles Woodward, Phthisis Pulmonalis.

North Carolina.

James H. Shepperd, An Inquiry into the Secretion of Bile—Willis Munro Lea, Mania à Potu—William D. Jones, Dysentery—Isaac Hall, Dysentery—Martin Read, Hemorrhoids—Ellis Malone, Sick Head-Ache—Levi Walker, Opium—James Aug. Washington, Mania à Potu—James T. Gilliam, Dysentery—Matthias E. Sawyer, Variola—James B. Slade, Ptyalism—Richard W. Thomas, Vesicating Properties of the Juglans Cinerea.

Delaware.

Joseph Thomas, Dyspepsia—William Johnson, Cholera Infantum—Theodore Physick, Dysentery—Edward Worrell, junr. Dysentery—Henry F. Askew, Gout—Thomas R. Brinckle, Chronic Hepatitis—Manuel E. Robinson, Secale Cornutum—Richard Sexton, Mania à Potu treated by Spider's Web—Thomas J. Squibbe, Dyspepsia—Samuel Pleasanton, Cholera Infantum—Solomon Sharp, jr. Inflammation.

Georgia.

Roger Q. Dickinson, Diseases of the Spleen—William S. Jones, Acute Peritonitis—Hopson M. Hubbard, Music as applicable to Diseases—Edward Hughes, Cynanche Trachealis—Phineas M. Kollock, Mania à Potu—James F. Watkins, Amenorrhœa.

Ohio.

Edward Stanbery, Lactucarium—John Andrews, Functional Derangement of the Liver.

South Carolina.

Robert R. Durant, Acute Hepatitis—William B. Moore, Strictures of the Urethra—William R. T. B. Prior, Physiology and Pathology of the Stomach—John Bellinger, Critical Days—David Evander Reid, Hydrocephalitis—Joseph Lee, Ipecacuanha—Amasa S. Park, Cynanche Trachealis—Edward M. Beckett, Dentition.

Virginia.

Gustavus R. B. Horner, Marasmus—Burton B. Wright, Cholera Morbus—Samuel Mosely, Cholera Infantum—William R. Taylor, Chorea Sancti Viti—John H. Griffin, Mania à Potu—James Keen, Hæmoptysis—George T. Hutchings, Cholera Infantum—John A. Cunningham, Clothing—George Aug. Sykes, The Effects of Drinking Cold Water—George A. C. Barham, Pneumonia Biliosa—David Bowman, Hæmoptysis—John N. Faulcon, Cholera Infantum—William Shultice, History and Pathology of Epilepsy—John Jefferson Hall, Acupuncturation—Mason Locke Weems, Capillary Circulation—William L. E. W. Fauntleroy, Modus Operandi of Emetics—Joshua Nicholas, Acute Hepatitis—St. Pierre Shackelford, Hepatitis—Thomas J. Adams, Hæmoptysis—Walter Somerville, Diagnosis of Disease—Alexander Copland, Measles—William Alexr. Spark, Temporal Arteriotomy and its Application—Richard A. Urquhart, Gastritis—Francis T. Meriwether, Pathology and Mode of Treatment of Tympanites—Alexander W. Tennent, Pneumonia Biliosa—Leven Luckett, Jr., Cholera Infantum—Thomas C. Overton, Menstruation—Hugh Wilson, Puerperal Fever—John Ingles, Jr., Rheumatism—Thomas Meaux, Heat a Cause of Bilious Diseases—George Terrill, Medical Observations made during a short Cruise on the Western Coast of Africa, in the summer of 1824—John Hunter, Dysentery.

Maryland.

Albert Ritchie, Relative virtue of Concentrated and Compound Medicines—Samuel W. Groome, Dysentery.

Tennessee.

John R. Groves, Protochloride of Mercury.

New York.

Daniel J. Carroll, Morbid Effects of Drinking Cold Water.

New Jersey.

William Coryell, Croup—John Cox Davis, Ophthalmia—William Smith, Dysentery.

The honourary degree of Doctor of Medicine was conferred on Mr. Edward Hudson, of Philadelphia; on Mr. Peter Wendel, of the state of New-York; and on Mr. Peter M. Hardaway, of Virginia.

The honourary degree of Doctor of Medicine has been conferred on John B. Mish, of Lebanon, Pennsylvania, by the Allegany College.

17. *Jefferson College.*

George Baldwin, Pennsylvania, Cholera Infantum; Peter Q. Beekman, New-Jersey, Syphilis; John Bowen Brinton, Pennsylvania, Cholera; George Carll, do. Anthrax; Benjamin B. Coit, Connecticut, Tetanus; Thomas M. Dick, South Carolina, Epidemics; Joel Foster, Vermont, Neuroses; Charles Graeff, Pennsylvania, Rheumatism; John Graham, Ireland, Epilepsy; Charles M. Griffiths, Pennsylvania, Cholera Infantum; Jesse W. Griffiths, do. Intermittent Fever; Ralph Glover, New-Jersey, Hernia; Nathan L. Hatfield, Pennsylvania, Dysentery; William Johnson, do. Extra Uterine Pregnancy; M. L. Knapp, New-York, Apocynum Cannabinum; Thomas B. Maxwell, Pennsylvania, Lobelia Inflata; Atkinson Pelham, Kentucky, Mania a Potu; Benjamin Shaw, Pennsylvania, Medical Practice; J. Frederick Stadiger, do. Epilepsy; James Swan, Massachusetts, Scrofula.

18. *University of Maryland.*

Abraham B. Hooe, of Virginia, Gastritis; Alfred Lewis, do. Tetanus; Joseph H. Downman, do. Hepatitis; Edward Brewer, District of Columbia, Gastritis; Hezekiah Magruder, do. Cynanche Trachealis; John Morris, Virginia, Rabies Canina; William F. Patton, do. Cynanche Trachealis; George W. Harris, do. Indigestion; George H. Wetherall, Baltimore, Phthisis Pulmonalis; James Watson, Virginia, Syphilis; Washington Waters, Maryland, Acute Hepatitis; Stephen W. Roszel, Baltimore, Vis Medicatrix Naturæ; Nathan Brown, do. Cholera Infantum; John M. Thomas, Maryland, Dropsy; Alexander Duvall, do. Cholera Morbus; Phesanton S. Sugg, North Carolina, Means of Abstracting Blood; Amos G. Gambrill, Maryland, Catamenia; Silas Larsh, do. Arthrodia Podagra; Franklin Waters, do. Cholera Morbus; George Moore, Pennsylvania, Gonorrhœa Virulenta; Wm. T. Stephens,* Maryland, De Effectibus Ebrietatis; Milton Johnson, do. Puerperal Fever; Benjamin D. Johnson, do. Plegmasia Alba Dolens; John D. Garrott, do. Gastritis; Tilghman Biser, do Non-contagion of the Measles; Richard T. Penn, do. Hydrocephalus Internus; Thomas B. Hall, do. Dysentery or Fibris Introversa; John W. Lewis, North Carolina, the Pulse; Leonard Mackall, District of Columbia, Diseases of the Bladder; James B. Robertson, Maryland, Enteritis; Frederick L. Grammer, do. De Rheumatismo; William Patterson, do. Dysentery; George P. Jacob, Virginia, Asthma; John H. Bayne, Maryland, Physiology of the Liver; William Cronmiller, Baltimore, Asthma; Arthur Pue, do. Phrenitis; Robert W. Haxall, Virginia, Dyspepsia; Edward Miller, Maryland, Ophthalmia; Albert G. Hudgins, Virginia, Dysentery; Robert M'Coy, Baltimore, Hydrocephalus Internus; Anthony Hermange, do. Respiration; Walter M. Wickham, Virginia, Pleurisy; James C. Eliason, District of Columbia, Opium; Emanuel K. J. Hand, Baltimore, Apoplexy; William T. Munnickhuyson, Maryland, Pneumonia; Joshua Soule, Baltimore, Gastritis; John Keene, Maryland, Rheumatism; Henry N. Deagan, Baltimore,

* This gentleman is entitled to the medal for having written the best Latin thesis.

Physiology of the Skin; Benjamin F. Stewart, Virginia, Cholera Biliosa; Edward Griffith, Maryland, Pertussis; Edward M. Chisolm, Charleston, S. Carolina, Encephalitis; Moreau Forest, District of Columbia, Respiration; William T. Gantt, Maryland, Cynanche Trachealis; Frederick D. Robertson, Tennessee, Intermittent Fever; Alexander Small, Pennsylvania, Hæmoptysis; John D. Wethered, Maryland, Hydrops Abdominis; Edward H. Freeland, do. Cephalitis; Richard M. Kilty, do. Mania a Potu; Charles Pottie, Virginia, Dysentery; John Cronmiller, Baltimore, Phthisis Pulmonalis; Jacob M. Jennings, do. Rheumatism; Haynes M'Kay, Virginia, Phlegmasia Alba Dolens Puerperarum; George R. Pearce, Maryland, De Phthisi Pulmonali; Henry S. Coulter, Baltimore, Nature of Caloric; Ferdinand E. Chatard, do. Cynanche Trachealis; Samuel Webb, Maryland, Concussion; Edward L. Boteler, do. Stimuli; Joseph W. Biggs, do. Dysentery; Samuel P. Dickinson, do. Cataract; Thomas R. Jennings, Pennsylvania, Modus Operandi of Refrigerent Applications; George W. Hinkle, do. De Diurecticorum exhibitione contra hydropem aliosque morbos; James H. Claggett, Maryland, Cynanche Trachealis; George M. C. Roberts, Baltimore, De Apoplexia; Duncan Turnbull, Scotland, De Cholera Infantum.

The degree of Bachelor of Medicine was conferred at the same time on Gilbert E. Elmer, of Louisiana.

The honourary degree of Doctor in Medicine was also conferred on Dr. J. B. Tilden, of Virginia; on Dr. David Porter, of Westmoreland county, Pennsylvania; on Dr. George Holcomb, of New-Jersey; on Dr. William Savage, of Augusta, Georgia; and on Dr. Richard G. Stockett, of Maryland.

19. *Columbian College, (D. C.)*

Richard Angell, England, the Vitality of the Blood; James Cook, District of Columbia, Hydrocephalus; Jesse Ewell, Virginia, Idiopathic Synocha; Charles K. Laubb, District of Columbia, Ophthalmitis; Thomas G. Moore, do. the Funis Umbilicalis in reference to Difficult Labour; Charles H. Stone, do. Arsenic.

20. *Charleston Medical College.*

South Carolina—William M. Lee, Charleston, De Hydrarg. Effect Morb.; Thomas A. Elliott, do. Acupucturation; Samuel W. Logan, do. Dyspepsia; Robert Lebby, do. Lycopus Virginicus; Anthony A. Ulmo, do. Apoplexy; B. B. Strobel, do. Experimental Dissertation on the Aralio Spinosa; Joseph Milligan, do. Tetanus; William R. Cuckow, do. Cholera; Maximilian Laborde, Edgefield, De Cholera Infantum; Daniel Bradwell, St. Matthews, Circulation of the Blood; Alexander Verdier, Beaufort, Dysenteria; Wm. S. Pennal, Abbeyville, Cynanche Trachealis; Stephen Garrett, Edgefield, Experimental Dissertation on Gelseminum Sempervirens; R. Crawford, Winsborough, Dyspepsia; Charles F. Gacy, Newbury, Hepatitis; G. M. Cannon, St. Stephen's, Febris Remittens; William Magill, Georgetown, Febris Intermittens.

Georgia—Augustus Baldwin, Venæ Sectio; William B. Ball, Medical Topography of Georgia; James S. Postell, Parturition; Edward Coppee, Leucorrhœa; James W. Taylor, Epilepsy; J. D. Newton, Hydrocephalus Acutus; Paul W. Connor, Hepatitis; H. H. Cone, Hydrocephalus.

Ireland—John E. Tims, Phrenitis.

21. *Transylvania University.*

Kentucky—Rochester Atkisson, Arthrosia Podagra; Joseph W. Barclay, Modus Operandi of Caloric; Richard F. Barret, Narcotics and Sedatives; Robert Best, Antilithics; John T. Cassell, Dysentery; Dickson G. Dedman, Abortion and Premature Labour; Rezen H. Dorsey, Venous Absorption and Assimilation; Washington Flood, Mercury; Fountain Gillaspy, Blood-letting; Francis Greenly, on the Etiology of Typhus Fever; William E. Harreld, Theory of Intermittent Fever; Aylett Hawes, Connection between Medi-

cine and Surgery; John W. Herndon, Dignity of the Medical Profession; Elijah G. Holton, Reciprocal Influences of the Brain and Stomach; Benjamin L. Hynes, Influence of Diet in Preventing, Curing, and Producing Disease; James H. Lane, Intermittent Fever; John W. Letton, Dyspepsia; Henry T. Loving, Bilious Fever; Henry Morehead, Sympathetic Affections of Dyspepsia; Azra Offutt, Trephine in Injuries of the Head; Henry J. Peck, Progress of Medical Science; Thomas B. Pinckard, Diet and Clothing; William B. Powell, Trachitis; George W. Robards, Cynanche Trachealis; Mann W. Satterwhite, Influence of Atmospheric Variations; William W. Thomson, Importance of Practical Anatomy; William Ward, Inflammation; John Woolfolk, Periodicity in Disease.

Tennessee—Robert H Campbell, Fever; Samuel H. Dabney, Gout; Madison Fisk, Cure of Diseases by Purgative Medicines; John L. Hadly, Dysentery; Giles T. Harris, Dyspepsia; Robert C. Holland, Etiology of Fever; Robert A. Irion, Relations between the Vascular and Nervous Systems; John C. M'Nairy, Hepatitis; Hardy M. Parker, Digestion; Daniel O. Williams, Humoral Pathology.

Virginia—William H. Chappell, Seat and Nature of Inflammation; Clement H. Jordan, Epidemic Dysentery of 1825; Thomas Hubbard, Hydrocele; German B. Gill, Diseases of the Testes; Alexander C. Johnson, Bilious Remittent Fever.

South Carolina—William V. Acker, Dysentery; Robert Delvin, Hygiene; Joseph J. Harley, Cynanche Trachealis; Thomas B. Rutherford, Hæmoptysis; Archibald Young, Dysentery.

Alabama—Granville W. Foster, Modus Operandi of Emetics, and their Effects in the Cure of Diseases; Aquilla D. Hutton, Cynanche Trachealis; John T. Smith, Hygiene; Joseph R. Sparks, Dyspepsia; Joshua S. Wilson, the Sources and Modus Operandi of Marsh Exhalations.

Ohio—David A. Bines, Intermitting Fever; Thomas Carroll, Intermitting and Remitting Fevers; Joshua Martin, Ascites.

Mississippi—Eli W. Harding, Endemic Fevers of the State of Mississippi; Isaac R. Caulfeild, Use of Mercury in Fever.

Louisiana—Richard R. Cuny, Bandage in Fracture and Gun-shot Wounds; Luther Preston, Etiology of Bilious Fevers in Hot Climates.

Illinois—Cornelius Campbell, Nature and Effects of certain Animal Poisons; James Reed, Gangrene.

North Carolina—William B. Maclean, Anatomy of the Groin.

Georgia—Hugh Symonds, Philosophy and Treatment of Dislocation of the Hip Joint.

Arkansas—Edward Swanson, Yellow Fever.

22. *Medical College of Ohio.*

Charles V. Barbour, Medical Topography of Louisville; Alfred Beasley, Empiricism; John E. Bush, Dyspepsia; William B. Chamberlin, Gastritis; Joseph S. Cliff, Injurious Effects of Ardent Spirits; Jacob B. Drake, Malerious Fevers; Aaron T. Hendricks, the Stomach as the primary seat of most Diseases; Joseph Johnson, Physiology of the Stomach; James T. Johnston, Autumnal Fevers of the Western Country; Joshua Mills, Portal Congestion; William Mount, Intermittent Fever; William Mulford, Hepatitis; Nathaniel P. S. Prentice, Diseases of the Antrum Maxillare; John G. Rogers, Dysentery; Melancthon Rogers, Ephemera Puerperalis; Neal Rowell, Endemial Sick Stomach; Hiram Todd, Identity of the Gonorrhœal and Syphilitic Poisons.

The honourary degree of Doctor of Medicine was conferred on John Sellman, of Cincinnati; and on Alexander Campbell, of Ripley.

The number of the matriculated students was 48; non-matriculated, 15. Total, 63.